MATERIAL ON HIV/AIDS

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MEDICAL MISSION INSTITUTE

AIDS AND INTERNATIONAL HEALTH DEPARTMENT

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April 1996

TO ALL RECIPIENTS OF LITERATURE PARCELS

Dear friends,

Re: Mailing List 1996/1

This is our first parcel of HIV/AIDS literature sent out in 1996 to a long list of addressees in 3 continents. As in 1994 and 1995 we wish to furnish representatives of church related institutions and NGOs with up-to-date information and material on HIV/AIDS related issues. Most of you received similar parcels previously; the names of others have been added recently. A list of all items is attached and reveals that our selection covers a rather wide field from gender issues to care for PWAs at home, from gynaecological issues to Tuberculosis-Control in countries with a high HIV-prevalence. Of particular interest for all should be the document from Panos on „AIDS: Science at the crossroads" and the short special reports on the IXth International Conference on AIDS in Africa (ICASA), held in December 1996 in Kampala/Uganda.

Our list of addresses is a very long one. It is not possible for us to individualise the content of these literature parcels. This means that not all of the items sent will be of interest or practical importance for everybody. But we hope that you will be in a position to act as multiplicators in two ways: by duplicating items which are relevant to you and passing the copies on to others with similar interests and/or by referring items which are not of use to you to those for whom they are relevant and of service.

We want to draw the attention of our addressees in Africa to a new training package from TALC. This package is called „Stepping stones", consists of a 240-page manual and a 70 minute video which is meant to help you in running a workshop on HIV/AIDS, gender issues, communication and relationship skills. It is available at £47.50, or, on request, free of charge from TALC P.O. Box 49, St. ALBANS, HERTS AL1 5TX, UK.

We had - at 3 previous occasions - requested that receivers kindly return to us a completed questionnaire. Unfortunately the response rate has been particularly poor the last time. If we would remove all the names of those who did not respond very few would be left. As we know about the enormous postal delays in some regions, we have removed only a few names from the list. We have again included a little questionnaire in this parcel and wish to appeal to you very seriously to complete it and return it to us. If we will not get any information from you after two subsequent mailings, we shall certainly have no choice but to terminate any further mailings to you.

We hope that you will be able to make good use of the items sent and wish you all the best for your work.

Clemens Obergfell Klemens Ochel Joachim Rüppel Gesine Ruppert-Mann Traudl Solleder

To the
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QUESTIONNAIRE REGARDING LITERATURE PARCEL

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6. The content of the parcel is:
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7. Any suggestions how delivery and/or content could be improved:

8. I/we wish/do not wish to remain on your mailing list.

9. Any other remarks:

Date .....

.....
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MATERIAL ON HIV/AIDS

SENT BY

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AIDS AND INTERNATIONAL HEALTH DEPARTMENT

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D-97074 WÜRZBURG

GERMANY

56

Facing the challenges of HIV AIDS STDs:

a gender-based response

- Understanding gender issues
- Strategies to deal with HIV/AIDS
- Interventions that work
- Personal testimonies
- Additional reading

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Facing the challenges of HIV/AIDS/STDs: a gender-based response
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EXECUTIVE SUMMARY

This publication aims to provide policy-makers, planners and programme implementers with information and ideas on how to incorporate a gender-based response to HIV/AIDS and STDs into their policies and programmes.

After outlining the global epidemiology of HIV infection, AIDS and STDs, it explores the concepts of gender and a gender-based response. The focus of the next section is the impact of the epidemic, elaborating on how gender-related factors affect HIV-infection risks and obstacles to prevention and care. Then gender-based responses and strategies are suggested and described.

Personal testimonies and brief descriptions of programmes and interventions personalize the text, show the impact of gender inequality on female and male risk and coping, and provide examples of effective responses.

To conclude, a checklist is provided for assessing the gender-based focus of existing or planned programmes and interventions.

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Why gender and HIV/AIDS/STDs?

» *"One of the most striking features of the response to the HIV epidemic to date is how few of the policies and programmes we have developed relate to women's life situations. The daily lives of women and the complex network of relationships and structures which shape them are well known to women and well documented. Despite this, our theories, research agendas, policies and programmes have not been grounded in and informed by these experiences."*

ELIZABETH REID [1]

As the HIV/AIDS epidemic and sexually transmitted diseases (STDs) continue to advance worldwide, we are learning ever more about how they affect individuals, households, families, communities, organizations and nations. The individual loss has been enormous, particularly in those countries and regions affected early on. AIDS is increasingly recognized in developing countries as a serious concern for socioeconomic development as a whole. Its impact is seen in family and community structures and relationships and in sectors as varied as education, employment, health care, social welfare, agriculture and the judiciary.

Economic consequences are already apparent. In highly affected countries, the business sector is experiencing increased absenteeism as employees fall ill, care for the sick or attend funerals. Loss of experienced and skilled workers in the formal and informal sectors may lead to lower productivity, savings and investments. In subsistence and small-scale agriculture, loss of labour may result in changes in farming patterns and food shortages.

Strategies to prevent the spread of HIV have focused on the promotion of condom use, reduction of numbers of sexual partners and treatment of STDs [2]. Many of these responses, however, have failed to address social, economic and power relations between women and men, among men and among women. These relationships, together with physiological differences, determine to a great extent women's and men's risk of infection, their ability to protect themselves effectively and their respective share of the burdens of the epidemic:

- Women are physiologically more vulnerable to HIV infection than men. Young women are especially at risk and AIDS death rates are highest in women in their 20s.
- Stereotypes related to HIV/AIDS and STDs and their association with marginalized groups (e.g., sex workers) contribute to blaming women for the spread of HIV. Fear of stigmatization inhibits people from taking preventive measures and leads women and men to assess their own risks inadequately. Moreover, many ideas and expectations regarding male and female (sexual) behaviour neither encourage men to act responsibly and protect themselves and their partners from infection nor stimulate women to challenge notions of female inferiority and social structures which keep them vulnerable.
- Low social status and economic dependence prevent many women

and young people (e.g., street-children) from controlling their own risk. With little negotiating power, they are often unable to insist on safer sex; disproportionately poor, they may have little choice other than to barter sex for survival.

– As society's traditional care-givers, women carry the main psychosocial and physical burdens of AIDS care. Yet they have the least control over and access to the resources they need to cope effectively; few men share domestic responsibilities and family care with their partners.

Although the necessity of focusing on women's needs has been highlighted time and again, especially since 1990 when the theme of World AIDS Day was "Women and HIV/AIDS", women continue to bear the brunt of the epidemic and to be highly vulnerable to infection. Reducing their – and men's – risk of infection demands gender-based responses that focus on how the different social expectations, roles, status and economic power of men and women affect and are affected by the epidemic. This involves analysis of gender stereotypes, redefinition of male and female relationships and roles, promotion of cultural beliefs and values supporting mutually responsible behaviour and exploration of ways to reduce inequalities between women and men. A supportive environment can be created thereby, enabling women *and* men to undertake prevention and cope better with the epidemic.

Women and men both have much to gain from increased gender sensitivity in general development policy, planning and programmes, and particularly by national AIDS/STD programmes, AIDS service organizations and related services. At all levels a gender-based focus on problems and solutions is urgently needed.

This publication aims to provide policy-makers, planners and programme implementers with information and ideas to help them incorporate a gender-based approach to HIV/AIDS and STDs into their policies and programmes. It highlights the nature and scale of the epidemic, explores the concepts of gender and a gender-based approach and the ways HIV/AIDS and STDs affect and are affected by gender. Suggestions are made for approaches and strategies to address some of the problems.

It is hoped that the analysis, information, ideas and examples will help stimulate many more gender-sensitive initiatives to help us cope with HIV/AIDS and STDs more successfully.

A gender-based response to HIV/AIDS and STDs focuses on how different social expectations, roles, status and economic power of men and women affect and are affected by the epidemic.
It analyses gender stereotypes and explores ways to reduce inequalities between women and men so that a supportive environment can be created, enabling both to undertake prevention and cope better with the epidemic.

How extensive are HIV/AIDS and STDs?

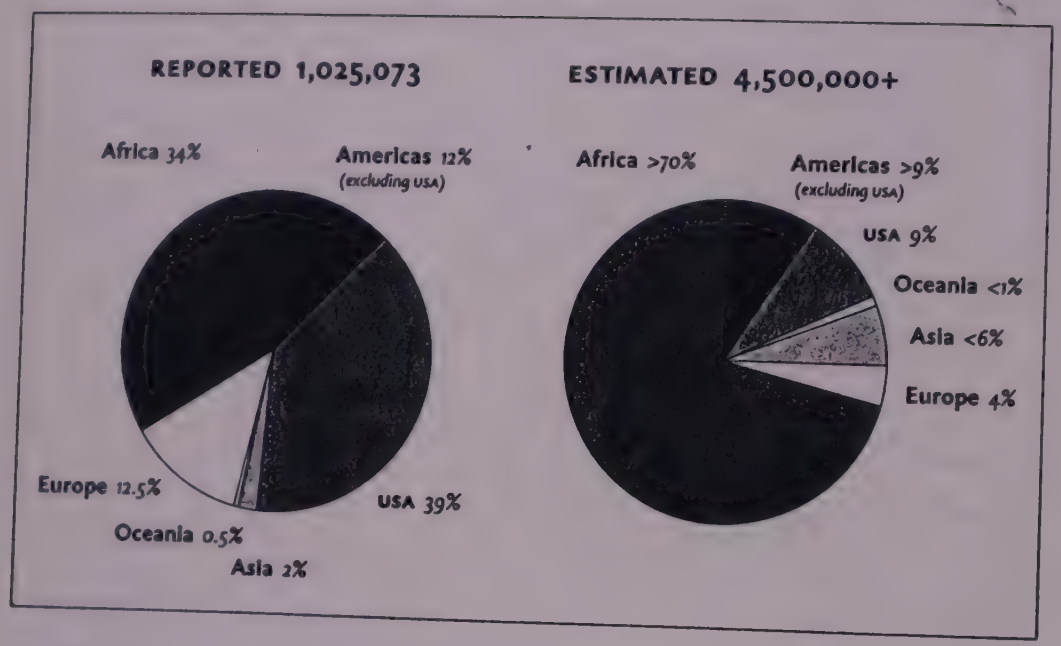

Figure 1 *Total numbers of reported and estimated AIDS cases (adults and children) from the late 1970s/early 1980s until late 1994 (Source: WHO/GPA)*

At the end of 1994, a cumulative total of 1,025,073 AIDS cases (adults and children) worldwide had been reported to WHO. The actual number of AIDS cases is unknown because of underdiagnosis, incomplete reporting and reporting delays. However, an estimated 4.5 million AIDS cases have occurred in adults and children since the beginning of the epidemic (Fig. 1).

An estimated 18 million adults (13-15 million alive) and 1.5 million children have been infected with HIV. Of the adults, 7-8 million are women (most of childbearing age, Fig. 2). WHO forecasts that, by the year 2000, 30-40 million HIV infections will have occurred, 90% in developing countries. Moreover, an estimated 5 million children under 10 years of age will be orphaned, losing one or both parents.

Figure 2 *Estimated distribution by region of total HIV infections in adults* **(bold)** *and women (italics) from the late 1970s/early 1980s until late 1994 (Source: WHO/GPA)*

The proportion of women with HIV and AIDS has increased dramatically. By 1994, women represented 40% of all new AIDS cases; up to 50% of all new HIV infections were in women, mainly those aged 15-24 years.[1] Female vulnerability has become increasingly clear in Africa and Asia. By the year 2000, an estimated 14 million women will have been infected with HIV and about 4 million will have died of AIDS.

HIV is transmitted predominantly through sexual intercourse (70-80% of infections). Mother-to-child transmission and needle-sharing by drug users each account for 5-10% of all HIV infections, while needle-stick accidents among health workers account for less than 0.01% of reported cases.

Higher proportions of young women than young men acquire HIV infection through sex. Their exposure to the virus at an earlier age, coupled with physiological factors, increases their risk (see page 10). In countries with high HIV prevalence, the greatest numbers of reported AIDS cases occur among women aged 15-34 years and men aged 25-44 years (Fig. 3).

HIV infection due to blood transfusion is more common in women than men. Women more often have blood transfusions because of anaemia and complications during pregnancy and childbirth. Perinatal transmission occurs during pregnancy, delivery or breast-feeding. The chance that a child of a seropositive woman will also be infected with HIV-1 is 33% overall, with transmission reported to be as high as 48% in some developing countries [3].

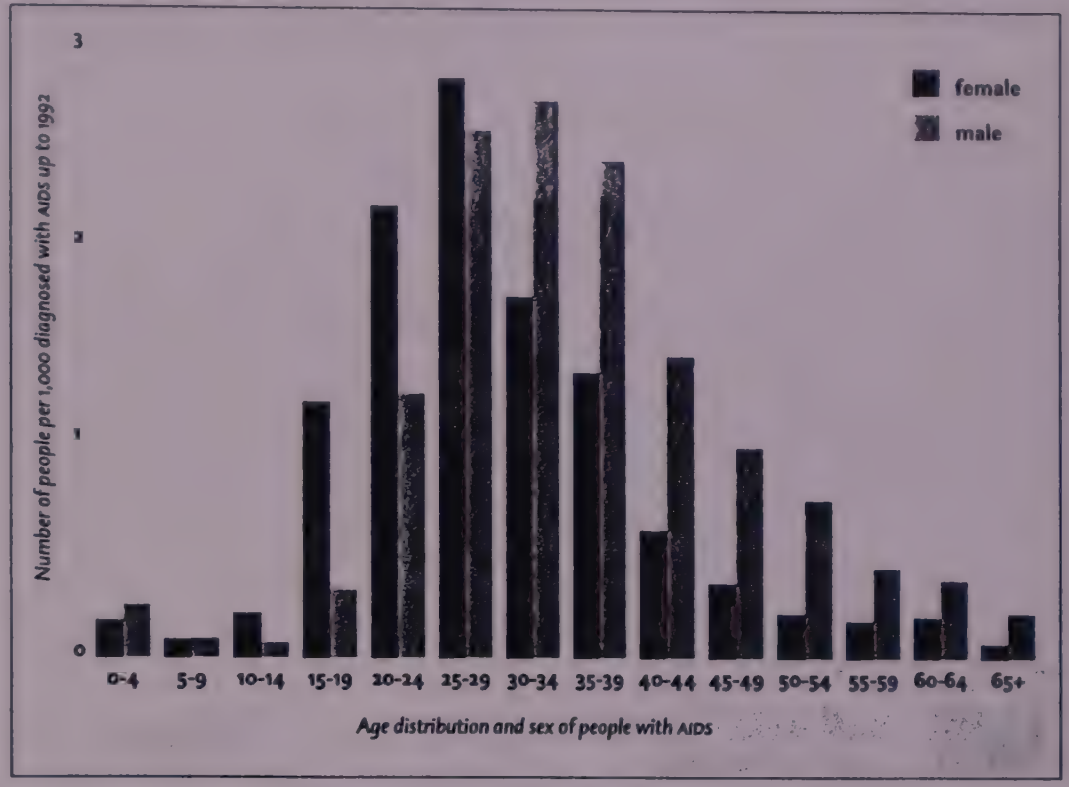

Figure 3 *Age and sex distribution of cumulative totals of people reported to have AIDS (Source: "Young people first!", AIDS Action, 1994, 25, p. 2)*

REGIONAL PATTERNS

In regions where initially more men than women were infected, there is now a marked increase in infections transmitted through heterosexual intercourse. In Europe, 15.4% of new infections in adults in 1993 were due to heterosexual transmission. In France, heterosexual transmission increased from 19% in 1991 to almost 25% in 1993. In 1993 in the USA, AIDS cases in women were almost 10% higher than in 1992; in nine major cities AIDS has become the leading cause of death among women of childbearing age.

In sub-Saharan Africa, HIV has been transmitted predominantly through heterosexual intercourse since the beginning of the epidemic. More than half of newly infected adults are female (11-12 women for every 10 men). The annual number of infections is still increasing. In Francistown, Botswana, for example, HIV prevalence in pregnant women rose from 8% in 1991 to about 35% by 1993. In some countries, e.g., Côte d'Ivoire, Zaire and Uganda, AIDS has become the leading cause of adult death [4].

[1] *All figures are based on WHO reports unless otherwise indicated.*

Seroprevalence rates in North Africa and the Middle East appear relatively low but are increasing. In Djibouti, for example, HIV prevalence has reached 14% among men attending STD clinics and 4% among women seeking antenatal care.

In Latin America and the Caribbean region, a shift from transmission through primarily homosexual intercourse to bisexual and heterosexual transmission as well as injecting drug use has taken place since the early 1980s. In Brazil, one woman was infected with HIV for 100 men in 1984; by 1994 this was one woman for four men.

Half of the newly infected adults in Asia are women. In a border town in Shan State, Myanmar, 6-10% of women registered at public maternal and child health centres were already seropositive in early 1995 [5].

SEXUALLY TRANSMITTED DISEASES

STD rates remain high in much of the world. Each year about 330 million new cases of STDs occur, of which more than 90% are in developing countries (Figs 4-5). Overall infection rates for STDs are higher in women than men. Ulcerative STDs, including syphilis and chancroid, and STDs causing inflammation, such as gonorrhoea and chlamydial infection, facilitate transmission of HIV in both women and men. Women, however, are disproportionately affected. As with HIV, women often acquire STDs at an earlier age than men. Gonorrhoea and syphilis are asymptomatic in 50-80% of women against less than 10% of men. In women, they often go untreated, especially in countries with inadequate STD programmes. The secondary health consequences of STDs are more serious for women as they may contribute to infertility, ectopic pregnancy, cervical cancer, premature delivery, stillbirth, low birth weight and neonatal infections. Ectopic pregnancy, cervical cancer and sepsis following pelvic inflammatory disease can be fatal.

Figure 4 (above) *New cases/year of curable STDs in the world (Source: WHO/GPA)*

Figure 5 (below) *Estimated new cases/year of treatable syphilis, gonorrhoea, chlamydia and trichomonas (Source: WHO/GPA)*

What does a gender-based response involve?

What changes are needed to create an environment enabling women and men to protect themselves and each other? How can they collaborate equally in providing adequate care and support for those directly affected by the epidemic? Gender-based approaches can help us answer these questions in a way which orients programmes towards promoting social changes supportive of HIV/AIDS and STD prevention and care.

Gender refers to widely shared ideas and expectations (norms) about women and men: ideas about "typically" feminine and masculine *characteristics* and *abilities* and expectations about how women and men should *behave* in various situations. These ideas and expectations are learned from families, friends, opinion leaders, religious and cultural institutions, schools, the workplace and the media. They reflect and influence the different roles, social status, economic and political power of women and men in society.

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Status and power affect the individual's risk of infection and communities' abilities to cope with the epidemic. The low status and power of women and young people lead to their subordination and restrict their possibilities of taking control of their lives in relation to HIV/AIDS and STDs. Societal pressures also make it difficult for men to change their behaviours in this regard. Their sexual behaviour may be influenced by their relations with other men and women (e.g., fathers, sons, mothers, sisters, peers) [6].

Below, three examples show how gender is related to norms affecting HIV/AIDS and STD prevention and care. The examples are simplified. In-depth gender analysis would also consider other differences that interact with gender to create situations of dominance and subordination, such as age, class, ethnicity and religion [7].

NORMS CONCERNING PARENTHOOD

In most societies, women's primary role in life is to bear and nurture children. Although responsible fatherhood may be promoted,

men's main duty is seen to be earning a living and dealing with the broader society on behalf of the family.

Such norms have two broad implications in relation to HIV/AIDS and STDs. First, a false division is made between "reproductive" (women's) and "productive" (men's) roles [8]. The expectation that women must care for the children is extended to all household members needing support, e.g., the elderly, those who are ill with HIV/AIDS and/or orphaned children. Men are not usually expected to undertake care roles.

This supposed division does not correspond entirely to reality, however. Almost universally, women have always undertaken productive as well as reproductive work; it has simply been unpaid, unrewarded materially and unrecognized. In many African countries, for example, well over half of the agricultural work is undertaken by women (68% in Central African Republic and the Congo, 70% in Gambia). Yet women do not gain equal access to educational opportunities or the paid labour market, both of which may contribute to social and economic independence and more self-assurance.

A second consequence is that childless women are not viewed as "fully adult" or may be considered deviant. Their social status is often low. If their childlessness is due to infertility, they may not know this or refuse to accept the diagnosis and try repeatedly (even with a variety of partners) to become pregnant. This of course implies that they have unprotected sex, thereby increasing their risk of exposure to HIV/STDs.

Moreover, when childless women express their opinions about community measures needed for HIV/STD prevention and care, their suggestions may not be fully respected or accepted by other community members. The voices of women who are mothers may also be given less credibility, because they are expected to confine themselves to household matters.

Sample statements reflecting the idea that women lure men into sex:

"Women should wear purdah [head-to-toe covering] to ensure that innocent men do not get unnecessarily excited by women's bodies and are not unconsciously forced into becoming rapists. If women do not want to fall prey to such men, they should take the necessary precautions instead of forever blaming men" (comment by a member of Malaysia's parliament during debates on the reform of rape laws [9]).

"The child was sexually aggressive" (reason given by a Canadian judge for suspending the sentence of a man who had sexually assaulted a 3-year-old girl [9]).

"The female condom will increase immorality among women and single mothers. It is worse than the male condom, giving women the opportunity to do what they want. We are going to preach against these condoms - the church cannot condone their use" (parish priest in Kenya [10]).

NORMS CONCERNING SEXUALITY

Among the numerous norms related to sex, many societies share ideas that women seduce men into having sex and that because male sexual needs are so strong, men cannot resist this. Such notions make men appear to be governed by their instincts, unable to control their behaviour and victims of female power. As a result, men are not expected to behave responsibly, while women's sexuality and behavior are controlled. For example, in many countries, girls who become pregnant must leave school, while boys who father children can continue their education with no requirement to contribute to child care. To protect men from themselves, social rules may also deprive women of the freedom to move about freely and lead to situations in which women, instead of their attackers, are blamed for sexual abuse.

These ideas form an obstacle to HIV/STD prevention because they absolve men from taking responsibility

for their sexual behaviour. They may also prevent women from taking measures to protect themselves. For example, women may be reluctant to buy and carry condoms because they will be accused of wanting to "entice" men into having sex. Women may be reluctant to report abuse because they fear this will affect their position in society: if it becomes known that a young girl has been sexually abused (the result of a trial), in some countries she will have difficulty marrying because both women and men see her as "spoiled".

"Right now I'm pregnant. It was an accident, I was planning to go to the clinic but my husband took away my card. He wanted more children so I became pregnant" (woman in ***Kenya*** *[11]).*

"I told my husband that it was better to use condoms, the doctor said so. The doctor had also given me some to use at home. My husband became very angry and asked who gave me permission to bring those condoms home" (woman in ***Kenya*** *[12]).*

NORMS CONCERNING POWER IN RELATIONSHIPS

In many societies, men are expected to control women in all aspects of relationships. This involves decision-making on when and whom a girl/woman will marry, when and how she will have sexual relations, when and how many children she will have, household expenditures, etc.

This type of male power is supported by tradition and social norms. Women learn, for example, that their first loyalty must be to their kin and families, causing them to act in ways that reinforce rather than challenge female subordination. Often, female family members enforce community norms saying, for instance, male relatives must assume authority over widows. In addition, men may impose their will on women, even resorting to violence to do so. Coupled with economic dependence on men, ideas and expectations concerning so-called "proper" male and female roles make it difficult or impossible for women to demand that men share responsibility for preventing sexual and perinatal transmission of HIV/STDs.

Gender analysis and gender-based programmes can help women and men redefine their relationships in a mutually beneficial way. As women move into traditionally "male domains", men can be encouraged to begin sharing responsibilities in the "female domain". Some women already exert considerable power, if often in subtle ways. Their existing strengths should be recognized and their self-confidence and social skills expanded. Men can be helped to see how their privileged position and social roles orient them more towards relationships involving authority and competition (and, perhaps, conflict) than collaboration. As the dynamics of male-female relationships change, communities will be able to benefit from the potential of all their members to minimize the impact of HIV/AIDS and STDs.

Men as well as women are trapped by the social and cultural conventions that require women to be subservient. They both need to be freed from the constraints of their social conditioning and helped towards a fairer – and less dangerous – relationship with one another (Photo: G. Diez, WHO)

Why do HIV/AIDS/STDs affect women more?

Women's vulnerability to HIV/AIDS and STDs is partly determined by physiological factors. It further reflects their wider social, sexual and economic vulnerability. The central issue is inequality. Economic need, lack of job opportunities, poor access to education and training and cultural expectations of female submissiveness and male dominance combine to prevent women from actively making choices and decisions about their lives, particularly with regard to limiting sexual risks and protecting their and their families' health. For the same reasons, men are led to deny risk and avoid responsibility, not only for their partners but for themselves. For both sexes this situation needs to change.

PHYSIOLOGICAL VULNERABILITY

Women and men

Researchers estimate that women's risk of HIV infection from unprotected sex is at least twice that of men. Semen, which has high concentrations of virus, remains in the vaginal canal a relatively long time. Women are more exposed through the extensive surface area of mucous membrane in the vagina and on the cervix through which the virus may pass. In men, the equivalent area is smaller, mainly the entrance to the urethra in a circumcised man plus, in an uncircumcised man, the delicate skin under the foreskin. Circumcision in males (not in females!) appears to have some protective value against STDs, including HIV. Men and women's risk of HIV escalates manyfold if STDs are present [13].

Young women

Young women are at even greater risk than mature women (except for menopausal women in whom thinning of the vaginal mucosa increases susceptibility to infection). A teenager's vagina is not as well lined with protective cells as that of a mature woman. Her cervix may be more easily eroded, potentially enhancing risk of HIV infection. She also faces potential bleeding at first intercourse through tearing of the hymen. In cultures where sex with very young girls is condoned, sexual intercourse is especially likely to cause trauma. In some countries, girls as young as 12 may be married to men three times their age. In addition, girls aged 17 years or younger who have unprotected sex are at increased risk of developing cervical cancer. Sexually active young women may easily

contract herpes simplex and human papillomavirus infections.

All these factors make young women especially vulnerable at a time when their negotiating and economic power is least, making them easier targets for sexual coercion and exploitation. This situation is worsened when more men, especially in high HIV-prevalence areas, seek out ever younger female partners in the belief that they are least likely to be infected. This is the most risky pattern of sexual partnership, as a group more likely to have HIV already (older men) transmits the virus to a group with low levels of infection (young girls).

Sexually transmitted diseases

WHO estimates that about 330 million cases of treatable STDs exist worldwide at any time. Yet women may have these infections without realizing it; some 50-80% of STDs in women are asymptomatic or go unnoticed because they are internal. Women are much less likely than men to seek timely treatment for STDs for this reason. Stigma attached to STDs, especially for women, inaccessibility of clinics, lack of money and too many other responsibilities further prevent them from getting treatment. Negative attitudes of health workers towards women presenting with STDs may be another major deterrent to their seeking treatment or even contraceptive advice. This is true of teenage girls in South Africa, for example [14].

Cultural practices

Certain cultural practices may exacerbate women's physiological risk of HIV infection, especially when HIV is widespread in the population. Many women actively support these practices because they enhance their social status and security with their partners. Examples:

- In some parts of the world, women use herbal and other agents in the vagina to cause dryness, heat and tightness. This practice is carried out because people believe men prefer "dry sex" (in which women feel like virgins) and because they think that female secretions are unclean. The substances used can cause inflammation and erosion of the vaginal mucosa, making it easier for HIV to enter.
- Excessive rubbing of the genitals during foreplay and intercourse, or "rough sex", can lead to sores in the mucous membrane.
- Anal intercourse carries higher risks of HIV transmission because of frequent lesions. Although it is often associated with homosexual contacts, heterosexual couples practise it to preserve virginity, to protect against pregnancy, for (usually male) sexual pleasure and in a search for sexual variety.
- Female genital mutilation (circumcision) is practised in various countries. Infibulation (in which the labia minora and majora are cut away and the vulva is sewn shut leaving a pinhole opening for urination and menstruation) leads to extensive tearing and bleeding when sexual intercourse is attempted. It may also cause couples to practise riskier anal sex instead. The procedure itself could be risky if unsterilized instruments are used for several patients in succession. Less extreme circumcision, like removal of the clitoris hood, carries little risk during sex, but the procedure itself is potentially risky. Bleeding after circumcision may lead to the need for blood transfusions with unscreened, possibly contaminated, blood.

Shyamala, India:
"From one end of the room, partitioned by a curtain, a voice, loud and haranguing, came through the silence. It was unmistakably the doctor's. 'Spread your legs!... Tell me, where is it paining? Now tell me properly! Is it or isn't it paining? How are we supposed to understand anything if you won't talk? OK. Now you can go'... Suddenly the nurse's voice boomed: 'Everybody go and pass urine and come back!' I quickly followed three other women towards the single toilet... Back in the waiting room, some men had appeared. Two seemed to have come with their wives and two others... were hospital orderlies. I noticed their eyes stray towards the gap in the curtain" [15].

GENDER-RELATED VULNERABILITY AND OBSTACLES TO PREVENTION AND COPING

Male sexual priority

Commonly, though not universally, male sexual needs are acknowledged to a greater extent than female needs. This may be reflected in the very terminology describing male sexual desire, genitals and partnerships compared with female equivalents. Many cultures use words to describe male sexuality in a positive way and female sexuality in a more negative and judgemental way. Many women and men define sex largely according to what they believe gives men pleasure, particularly penetration. Often women do not explore, let alone assert, their own preferences, because this is considered inappropriate.

"Everything is centred around the pleasure of the man," says a Zimbabwean woman at a market. She sells herbs which, when put in the vagina, cause dryness and tightness. "So if these substances are harmful or even if discomfort is caused, it doesn't matter to the woman. She's doing what she thinks he wants. This is how we have been conditioned" [16].

The dominance of male needs and denial of female needs impedes open discussion between the sexes and limits people's chances of achieving mutually satisfying, respectful and safe forms of sexual behaviour. To curb HIV transmission, both partners should be able to express their worries about infection and use protective measures such as condoms out of respect and affection rather than as a sign of mistrust.

Sex within marriage, in particular, needs to be a source of mutual pleasure and bonding, rather than only a duty and a condition for procreation. However, it is within marriage or with regular partners that women may have most difficulty negotiating safer sex, such as condom use, as this implies lack of trust and infidelity. But it is essential that they be able to do so, as most HIV-infected women have been infected by their husband/regular partner.

Men living separately from their families for months at a time often have unprotected sexual relations with several partners, increasing their risk of infecting themselves and, subsequently, their wives or girlfriends (Photo: G. Diez, WHO)

Economic vulnerability and sexual services

For women and men struggling with daily survival, concern about a disease that may kill 10 years hence is a luxury they can ill afford. Women's economic dependence makes them vulnerable and, for many, training and employment opportunities are few. If selling sex enables them to survive today, long-term concerns remain out of focus. A Ghanaian woman engaged in sex work in Abidjan, Côte d'Ivoire, commented, "I need to feed and clothe my children now. How can I worry about something that may not affect me for many years?" [17].

*Richard, **Uganda**: "After dropping out of school at age 17, I made friends with four boys who were prominent. We had quite a lot in common, only they engaged themselves in business and sexual life. We used to have evening walks from place to place, especially where there was entertainment and drinking. At such places, these boys could meet more than one sexual partner. They tried their best to persuade me to do what they were doing, by sending me different girls so that we could exchange a word or two relating to sexual activity. I usually had fears and shyness. I didn't know how to start: what could she think of me and what could she say afterwards? How would I engage in actual physical intercourse?*

After all their pressures, the group was not happy with me at all. They felt that I didn't belong and started to tease me with a lot of embarrassing questions and statements like: 'You will suffer from backache because of not releasing the semen. Richard, you seem to be impotent – were you castrated?' To sum it up, they deserted me on those grounds" [21].

*Young girls who may be raped by a male relative or who are married off as children are especially vulnerable to HIV/STD infection. At a maternity hospital in Lima, **Peru**, 90% of the young mothers aged 12-16 years had been raped by their (step)fathers or another close family member. In **Jamaica**, 40% of pregnant girls between 11 and 15 years of age reported that their first intercourse was "forced". Meanwhile, in **India**, nearly 16% of 133 middle- and upper-class postgraduate students said they had been sexually abused before the age of 12 years [2].*

» *In **Papua New Guinea**, various factors in tribal life combine to place women in situations of HIV/STD infection risk. Customs encourage strong male bonding mechanisms that are played out during frequent group sex events. Many men participate in having sex with one woman and several other men. Even though this is often against the woman's will, it is not considered rape in the legal sense or condemned [24].*

boys to resist experimenting with multiple pre-marital partners, while girls are expected to remain virgins until marriage or at least to remain faithful to one partner.

A further potential source of risk is polygamy, usually meaning multiple wives rather than multiple husbands. If no partner has sex outside the group, this can be a safe system but if any one is infected, all may be at risk.

To curb the epidemic, marriage should be squarely acknowledged as a major risk factor for women in many societies. The simplistic message of lifelong monogamy is a poor one if one partner already has HIV infection and will not use condoms. It has been observed that some men who learn or fear they have HIV infection marry to ensure someone will care for them when they become sick [22].

Violence against women

Violence against women, especially rape, is a risk factor that is inadequately recognized or addressed. In South Africa, an estimated 370,000 women are raped every year; in the United States, the Department of Justice reports that a woman is raped every six minutes [23]. Ironically, marital violence is more tolerated by society than violence outside marriage, to the extent that rape within marriage is not a recognized offence in many parts of the world. The woman's word is usually given less credit than that of the rapist. It is also traumatic and difficult for women to report rape and secure a conviction; the extreme is reached in some Islamic countries where a male witness to the rape is required.

Violence against women is sometimes socially condoned. Many would argue that widely distributed films and television portrayals of women as sex objects and victims of abuse reinforce the acceptability of violence against them. In some countries ritualized violence, including rape, is condoned in certain circumstances.

In the worst situations, physical and sexual violence against women are commonplace. Wars and armed conflicts, generally accompanied by widespread rape, now have the added risk of

spreading HIV and STDs. The physical trauma of violent sex, often multiple rape, makes transmission particularly likely. Indeed, any coerced sex increases the likelihood of micro-lesions in the vaginal mucosae which may then be entry points for HIV.

Blame and rejection

Despite the realities of infection patterns, gender stereotypes allow women to be blamed for spreading HIV/STDs. Men are often reported to be infected by sex workers or casual girlfriends, who may be castigated by men and women alike, while less blame tends to fall on men than women who have multiple partners. Indeed, in some African and Asian cultures, it is believed that men must regularly release semen to avoid ill health.

Although for both sexes alcohol consumption reduces a sense of responsibility and leads to risk taking, women are more likely to be criticized for this. Male drunkenness is widely tolerated, men being excused for giving way to "natural urges".

Men in some societies may boast about STDs because these show they are "real men" who have sexual relations. For a boy growing up this may be part of his initiation into manhood. But for a woman the story is different; she is more likely to be looked down on as loose or unclean. In much of southern Africa, for example, STDs are derogatorily termed "women's disease" and men blame women for their infections. A doctor's wife in Australia with pelvic inflammatory disease was told by her health worker that she should be ashamed of herself: "someone in your position coming in with a problem like this" [26].

If HIV infection is discovered first in a wife, perhaps because she is the first tested when a baby falls sick, she is readily blamed. Her husband may refuse to be tested or, if found positive, accuse her of infidelity to cover his own behaviour. She may equally be blamed by other relatives, regardless of whose infection was discovered first.

At the same time, the denial of women's sexuality and the social assumption that they must be "pure" make it hard for women to acknowledge any other sexual experiences they may have had even before marriage. To do so is to court divorce or blame, even from female relatives. This blocks women from assessing their own risk and discussing risk behaviours and situations with their partners. Women living with HIV (perhaps more so than men) are even expected to become sexually inactive.

*Married women in Palembang, **Indonesia**, who knew little about AIDS, associated it with "loose women" rather than believing themselves to be at risk. They believed that AIDS was contracted through "sexual contact with the lower class of commercial sex workers" and that the high class had usually been protected from STDs. They also said that AIDS comes from "promiscuous women and multiple partners"* [25].

BLAME AND REJECTION

» *Sylvia, **The Netherlands**: "I only dared tell my two sisters after a year. One thought I might be imagining it because I still looked healthy, didn't I? My other sister felt it was my fault. If I had lived well, with a complete family [including a husband], it wouldn't have happened to me... My ex-partner told others, too... Because people gossiped about me, the vice police started following me; they had heard I was whoring around and infecting everyone. Of course, they couldn't prove that"* [27].

» *Reina, **The Netherlands**: "When a person is infected with HIV, that does not mean that sex disappears from her or his life, even though some people think those living with HIV/AIDS should never have sex again. Of course, none us of living with the virus wants to pass it on to others... We want to have sex for the same reasons you do: because we like it, to express love, to gain consolation or security. In that, we are like everyone else"* [28].

Blame can also lead to institutionalized human rights violations, e.g., the compulsory screening of sex workers. Women carrying condoms may be charged by police as sex workers; thus even when they act to safeguard themselves, this may backfire.

Lack of information

Many women have poor understanding of their own bodies, mechanisms of HIV/STD transmission and their level of risk in unprotected sex. Many men also lack adequate information about their own bodies and tend to have even less information about women's bodies and needs.

Addressing these gaps in information and understanding is difficult because many poor men, and even more women, have low levels of education and literacy and have little access to printed information on HIV/AIDS and STDs. Men are more often able to gain information from radio and television. Consequently, women hear about HIV/STDs later and not infrequently have little or incomplete information about transmission. This may prevent them from assessing adequately their own risks. A female merchant in Senegal commented: "I don't need condoms because I am not a prostitute. I have a husband and children. It is rare that during my travels I fall to the advances of a man. When I do, it is with someone I trust. I only choose to have sexual relations with men who are clean and visibly healthy, polite, and capable of respecting me. These men know me, trust me and know that they don't need to use condoms with me" [29].

Communication

Poor communication between parents and children and between partners about relationships, male and female sexual needs and responsibilities exacerbates risk. Youth as well as adults can be taught to discuss sex-related issues (health, needs, relationships); ideally, this should become an accepted norm.

Family stress

Women's traditional family roles are arduous. Rural women in many parts of the world are primarily responsible for subsistence agriculture and, in rural

COMMUNICATING CAN BE HARD

*Somchai, **Thailand**: "I want someone to talk to, but it is very difficult to open up. I cannot talk to my wife about this. She does not have much to say about it and rarely exchanges conversation with me. I don't really know how she feels or what she really thinks. She is a very good wife but we cannot be friends" [30].*

*Woman, **South Pacific**: "I was aware my husband was having casual sex when not with me, but I was too ashamed to ask him to take precautions. I kept telling myself, next time. My advice to young mothers is, 'Don't ever wait for next time.' Now I have big regrets. I'm so lucky that I didn't have any more children after I was infected" [31].*

*» In an **African country**, when Janet's husband learned that she had HIV infection, he threw her out with their two small children. Janet's father had died of AIDS and her mother was sick but trying to look after Janet's seven younger siblings. The logical outcome was for Janet to return to her parents' home and help. Her mother has since died, leaving Janet to care for all nine children. None are in school, all are malnourished. They live in one room, a corner of which is partitioned off and rented out to provide a small income. This, and what the older girls can earn from selling sex, keeps the family alive. No help has been forthcoming from Janet's husband nor from other relatives on either side.*

and urban areas. Informal sector activities. Women usually undertake most household tasks, go through pregnancy, childbirth and lactation, and rear children. Large numbers of women are in fact household heads but lack sufficient authority, money and material resources, family and formal support to provide adequately for their children and themselves. AIDS-related stigmatization and the extra care burdens brought on by the disease worsen existing gender inequalities, increasing women's vulnerability and exploitation.

The impact of AIDS on the family may be devastating, with both parents and sometimes one or more children becoming ill and dying. Girls may be withdrawn from school to look after their families, thus increasing their economic and social vulnerability when they grow up. The elderly also take up an increasing care burden when they themselves may be frail.

A nurse: "In many countries in **Africa** *families admit they have had to disrupt the schooling of the girl children; first, because they need another pair of hands to help them in caring for the sick, and second, because the family resources are reduced and the little funds available go into meeting the basic survival needs of the family... They seem to see this as one big disadvantage of the home-care programme activities" [32].*

Young girls are kept from school to help with care, e.g., to get food and medicines (Photo: Roel Burgler)

Elderly grandparents may face the responsibility of raising their grandchildren (Photo: Roel Burgler)

AIDS makes decision-making about child-bearing, abortion and breast-feeding much more difficult. Available services may or may not provide helpful advice or be sensitive to the stress women face around these and other sexual health issues. In fact, women and couples may face humiliation and misinformation in the very centres and at the hands of the so-called professionals supposed to help them.

*Pung, **Thailand**: "It all happened with my first pregnancy when I had a blood test. The nurse asked me some questions and finally told me I was infected with the HIV virus... I brought my husband in for testing and he tested HIV-positive... I remember crying when both of us sat in front of the nurse.*
She asked us what we wanted to do with our unborn child. She suggested aborting the child and added that it would be free of charge. If I agreed to do so, I was also required to have a hysterectomy.

I talked to my husband and we both agreed to have an ultrasound to see if our child was healthy.
The technician said the child was healthy and strong.
Then she looked at my HIV status and suddenly replied: 'No, no you cannot keep the child'; her voice was so threatening. 'You must abort the child', she insisted.

My husband said it is probably better to abort the child, letting go now was better than losing it when the child grew and became as lovely as our dreams.
I was not sure myself but was in a state of shock.
I asked the nurse if I could have a sterilization that was reversible. She looked at me with surprise and asked if I still had hope for a cure. On the form there was only a hysterectomy so she wrote that I wished not to have a permanent sterilization operation.

I had my child aborted, with a special deal: abortion with sterilization – free of charge. But I still don't know what kind of sterilization I got. I am not sure if it is a reversible or permanent sterilization. I have no way of knowing what has been done to my own body" [33].

Home care

In areas where the epidemic is already severe, particularly sub-Saharan Africa, hospitals cannot cope and much patient nursing is done at home. Numerous home-care programmes have been developed by church and community groups or as hospital outreach programmes. AIDS service organizations provide counselling, material and practical help, spiritual support, nursing care and advice. Excellent work is performed by dedicated staff, yet coverage remains low, often under 10%. Visits from support teams may be on a fixed and infrequent schedule, and cost-effectiveness and sustainability remain serious concerns. The extra burden inevitably falls on the family, in particular on women.

In other regions, such as Latin America, the Middle East and Asia, some hospitals, clinics and social services do not provide care because staff are still afraid to accept people with HIV/AIDS. Stigmatization and discrimination may also prevent families and community members from providing support.

The growing orientation towards home care may, in fact, worsen women's situation, particularly as men are often the first to become sick. The wife may have to nurse her husband while her own health deteriorates, but the main expenditures are for his care. There may be no appropriate care-givers to nurse her through her sickness. Rather than an excessive focus on home care, developing a continuum of care between hospital, clinic, local hospice and other community care is preferable, a strategy supported by WHO. This enables health workers at the local clinics, community health workers and neighbours to help when appropriate and when requested by the family.

Men need to be motivated to assume stronger care roles in the family, both for the sick and in general around child care. Health and welfare concerns cannot remain women's preserve. If this can be achieved, husbands may be less likely to desert women who are found to have HIV and will write wills or otherwise provide for their families when they themselves are dying.

Legal and human rights

At present, women's rights in many countries are curtailed. They may have little right to land, to inherit property, even to keep their own children when their husbands die. AIDS throws these problems into stark relief because more women are being widowed at a young age and will themselves face an early death. Safeguarding their children's future may be a desperate worry for these women, yet they may lack the means to provide for them without extended family support. In some countries, women are traditionally inherited by the deceased husband's brother. Their economic and social survival may depend on their acquiescence.

ASPANE, in **Mexico**, helped Yolanda, 26 years old. She lived in a "house" of carton near a garbage dump in a Mexico City suburb with her 3-year-old son and 5-year-old daughter. When her partner died of AIDS and her neighbours discovered that Yolanda was also HIV-positive, they tried to drive her away. Yolanda sought refuge with her mother-in-law, but her daughter was sexually abused by a brother-in-law in that household.

In desperation, Yolanda turned for help to a charitable organization for abandoned children. After proving that her children were HIV-negative, so that the organization would accept them, the Department of Social Welfare helped Yolanda to transfer custody of the children legally to the organization. They went there when she died.

VIOLATIONS OF HUMAN RIGHTS

*ASPANE in **Mexico** helps Rosa, who contracted HIV from her bisexual husband. He abandoned her and their four children when he learned that she, too, was HIV-positive. Rosa's in-laws blamed her for the HIV infection and consequently refused to offer her any help or information about her husband, who went into hiding for fear of being made legally responsible for child support.*

*Deborah in **Uganda** lost her husband to AIDS and is herself very sick. Her brother-in-law tried from the very beginning to inherit her, but she categorically refused so as not to infect him and his wife. He repeatedly told her he does not care that she has AIDS and is willing to take the risk of becoming infected. He harassed her for almost a year; when she held firm and refused, he cut off all financial support to her and her four children. Once she refused him, she was ostracized by the entire family and cannot rely on them for anything, even moral support. Now, he is trying to claim the land that his brother left jointly to them* [34].

*"When life became difficult in her native village of Melamchi in the **Nepali hills**, Geeta moved to Kathmandu where she worked as a housemaid. When her cousin promised her a better job in a carpet factory in India, she jumped at the opportunity: 'I didn't realise that I was sold to a Nepali brothel keeper in India until the lady told me to engage in business... I wept and wept. I was shocked to be sold by my own relative. I went mad. They admitted me into a mental hospital. After a year, I was ultimately forced into prostitution. I never liked it – that was not what I had wanted. But you can't fight against luck and fate.'*

Geeta was sent home with 200 Indian rupees (US$ 6.50) for her transport after she tested HIV-positive. Back in Melamchi, she found her mother had died and her father refused to take her back. Determined to begin a new life, she rented a liquor shop with her savings. The shop was successful until her HIV status became known in the village – then business collapsed and she was forced to close down" [36].

On the other hand, after the death of a husband, women around the world may be disinherited by the husband's relatives, particularly if they blame the woman for his death.

At another level, married women's confidentiality may be broken with relative impunity leading to violence or desertion if their husbands blame them for infection. Meanwhile, women may not be informed of their partners' HIV status. The right of partner notification versus strict confidentiality is being debated in many countries and different policies are being developed. For women the outcome is particularly crucial as infection often enters the family through the husband. Uninfected wives could, in theory, protect themselves but only if access to information is accompanied by the economic, social and legal means to take preventive action.

The rights of women living with HIV to bear children or seek an abortion are hotly debated. A British woman living with HIV was angered and upset by accusations that her choice to have a baby was selfish as the child risked infection or, if it lived, would certainly be orphaned fairly young [35]. In many developing countries a woman's status is highly dependent on motherhood; much more than in Britain it may be of great importance to an HIV-positive woman to have a child.

The issue of sex work also raises difficult legal and ethical problems. While soliciting remains illegal in most countries, sex workers remain vulnerable to abuse, are difficult to reach with HIV/STD prevention and support programmes, and face increased stigma. Yet arrangements for sex work may involve minors, abduction and coercion; these aspects of the trade must be stopped. AIDS is giving rise to increased public outrage about these human rights violations.

Another neglected area is the rights of homosexual women and men to social acceptance, child care, mar-

riage and inheritance. Lesbian relationships are a preferred lifestyle for some women and generally carry a low risk of HIV infection. However, societal intolerance precludes many women from exploring this option even if they would like to. Male gay relationships are more common in some societies, but their very existence may be denied or condemned, leading gay men to marry and engage in bisexual contacts even if they prefer only to have sex with men. "Talk to any African government about homosexual issues and the spread of AIDS, and they simply tell you that homosexual activities only go on in the Western world," said Obi Zikora, president of Gentlemen Alliance, in Nigeria [37]. "The stigma attached to homosexuality frightens away many who should be examined from going to doctors."

As with sex workers, legal rights for homosexuals and lesbians need to be strengthened and societal intolerance challenged if they are to cope better with HIV and AIDS and not be driven underground.

Structural patterns

Economic policies widening the gap between rich and poor countries and rich and poor people within nations exacerbate the conditions for HIV/STD transmission. For example, economic structural adjustment programmes may have a negative impact on rural and urban poverty, national debt and trade relations. These policies hamper countries' capacity to provide social, educational and medical support to affected families and communities, especially if food subsidies are cut and social, welfare and health expenditures are reduced.

The epidemic hits hardest the developing world and the poor inner cities of industrialized countries, which are least able to cope. Furthermore, poverty increasingly has a female face: UNDP estimates that 70% of the world's poor are women. As prevention efforts are

The epidemic hits hardest among the world's poor, 70% of whom are women (Photo: Roel Burgler)

stepped up, communities' abilities to cope must also be strengthened. Only through improving coping capacity will fear and stigma around AIDS be reduced, allowing prevention strategies to really work.

Within this framework, empowering women and reducing gender inequalities are critical. The structural basis of gender inequality must be challenged by promoting personal attitude and behaviour change. Women must gain access to the education, training and employment they need to achieve sexual relations on equal terms and to control their risk of HIV/STDs. Cultural expectations that exonerate men from taking responsibility for health and welfare concerns must be transformed, along with the structural conditions of work, housing, migration, etc., that prevent this from becoming a reality.

*Woman, **Zimbabwe**: "My husband passed away from AIDS when he was 35; he was ill for six months. He used to work as a general labourer in a big firm and only came home at weekends. We had eight children, but the last two both died. This leaves me with six children to feed. It is very hard. The two eldest have had to leave school to try and earn money, but I am trying to keep the youngest four in school.*

In the early stages of my husband's illness we could cope. It became difficult when he lost his job. We had to spend a lot of his savings on special food for him, and he lost his medical aid cover. I grow maize and try to make money selling crochet work, but it is not sufficient. I cannot get a proper job – in these days it is even more difficult as a woman because it is men who are expected to work.

My husband's workplace helped with the funeral and will pay me a small pension for four years. But he had not worked there long so the amount is low. My husband's brother is supposed to take care of us. He knows our problems but did not help at all during my husband's illness nor after his death. Now he wants to marry me, but I think it is in order to take my husband's estate, not to help us. I am lucky because my husband left a letter instructing that his property was to remain with us and that I should not marry his brother in the traditional way. Fortunately, the headman and the other village elders support this decision because they know that this brother did not help us when my husband was alive. Otherwise it would be very hard for me to refuse. I have to think of my children. But by refusing to marry I lose any hope of help from him.

If I die, the oldest children will have to take care of the young ones. I cannot trust my husband's brother, and I do not think his first wife would treat them well. My own two sisters cannot take the children because their husbands will not allow this. It is not traditional and they have their own families. The women take care of the children, but it is the husbands who must make the decision about this."

Can women and men reduce risks and share responsibilities?

The goal of our response to HIV/AIDS and STDs is to decrease vulnerability to infection, reduce stigmatization and discrimination and curb the epidemic's socioeconomic impact. This will be best achieved through gender-based approaches promoting shared responsibility for prevention and care between women and men.

Gender-sensitive strategies must address both short- and longer-term needs and goals. Short-term strategies may focus on people's immediate needs in specific communities, including obtaining basic information about HIV/AIDS and STDs, gaining access to sexual health education, acquiring condoms and obtaining back-up support for home-based care.

Longer-term strategies are directed at underlying cultural and social structures. They aim to promote mutual respect between men and women and equal access to all types of resources. The goals of longer-term strategies include, but are not limited to:

- changing ideas and social norms that keep women in an inferior social position
- achieving shared decision-making power between women and men at all levels: in relationships, community affairs, political and economic bodies, etc.
- creating structural changes to give women equal access to education, training and income-earning opportunities
- reallocating work responsibilities so that women and men share them fairly
- encouraging legalization of traditional marriages or unions where this would strengthen the rights of women to property, inheritance and children.

Governments and NGOs are now beginning to integrate a gender perspective into their HIV/AIDS/STD programmes. Women living with HIV/AIDS are playing an increasingly important role in this process. Below, examples from programmes around the world show how a gender-based response is being developed. The examples are randomly grouped in action areas. Gender-sensitive strategies must be developed simultaneously in all of them:

- creating a supportive and enabling environment

To ensure wider development and implementation of gender-sensitive strategies, collective action is required. Women's organizations and networks can help by reinforcing such strategies, sensitizing and mobilizing women and men, and making linkages to other gender-based initiatives in society. Collaboration and coordination between UN system agencies, governments and NGO networks may further serve to reinforce gender-sensitive responses.

research
facilitating access to information and services
changing the way we think and act
sensitizing and mobilizing men
combating discrimination
- developing gender-sensitive care and support
- living positively with HIV/AIDS.

A SUPPORTIVE AND ENABLING ENVIRONMENT

The social environment must enable people to achieve effective prevention and care. Policy, legal and human rights, economic, social, cultural and educational structures are needed that benefit women to the same extent as men. If such structures are developed, then women and men will have a much better chance to change the social norms and values oppressing them in their daily lives. Although structural changes take time to achieve, strategies must be developed to address them at the same time as grass-roots initiatives improve women's daily life situation.

Increasing girls' access to education and vocational training is an important part of a gender-based response (Photo: Roel Burgler)

Structural measures

Decreasing women's economic dependence is an important step towards enabling them to reduce infection risks for themselves and their families. A credit scheme established by the Grameen Bank and Bangladesh Rural Advancement Committee (BRAC), for example, enables rural women to establish an independent income by offering them loans. The programme has enhanced women's autonomy and self-confidence and led to increased contraceptive use [38].

In addition to income-generating schemes, other structural measures are necessary. These include guaranteeing women:

- better access to schooling, vocational training and higher education
- equal access to employment and equal pay for equal work
- equitable access to social and health services
- legal and human rights protection equal to that of men
- better representation in political and economic bodies
- freedom from restrictive cultural expectations and practices.

Political and community support

Broad political and bureaucratic support is necessary if governments are to implement the measures outlined above. This can be facilitated if NAPS are made intersectoral, involving not only the health sector but also ministries and departments such as women's affairs, education, labour, justice, agriculture, defence and social affairs. By creating links among these sectors, the HIV/AIDS epidemic can illustrate why women must gain greater access to education, paid employment and social services. NAPS can further mobilize support for a gender-based response by formulating policies that provide various ministries and NGOS with a framework for action.

Governmental and NGO programmes mobilizing communities to

INCORPORATING GENDER AND WOMEN'S CONCERNS INTO NATIONAL RESPONSES

The first generation of National AIDS Programmes (NAPS) were gender neutral in their approach. Health education messages ignored gender disparities and roles in sexual and family relations. One and all were simply urged to "stick to one partner", avoid casual sex, reduce the number of sexual partners or use condoms.

As awareness gradually developed, NAPS started to address specific issues confronting women in relation to HIV/AIDS. The initial approach was to "mobilize women" through women's NGOS as agents of health education and information. When concern arose about women's heightened vulnerability to HIV, interventions were developed to enable women to talk about sexual safety and condom use with their partners. This approach was criticized because it neglected men and the fact that men control the circumstances under which most women are exposed to risk or protected from infection.

Analysis of gender disparities and women's disadvantaged socioeconomic status is now being incorporated into national HIV/AIDS policies. The challenge is to integrate gender considerations into all aspects of programme development.

Botswana's National Information, Education and Communication Strategy for HIV/AIDS Prevention places gender prominently among factors related to HIV/STD spread. Guidelines for gender interventions for men and women are a key component for district programme planning. By determining how gender disparities affect women throughout their lifetime, interventions can be facilitated at community, school and workplace levels to ensure that girls do not grow into adults with increased vulnerability to HIV/STD infection.

Interventions also need to take account of women's responsibility for providing family and community care. Programmes developed by social welfare agencies, NGOS, employers, etc. should make provision for these responsibilities. Education and communication programmes should encourage sharing of domestic responsibilities and tasks between men and women.

Only when countries address gender disparities squarely in their economic, political and social development strategies will incorporation of gender and women's concerns into HIV/AIDS programmes have a sustainable impact.

TSHIDI MOETI, *former* **Botswana** NAP *manager*

"The most critical decision of my life was to reveal to representatives of Caribbean media that I had tested positive for the AIDS virus. Coming face-to-face with a battery of journalists was a nerve-racking experience. I decided to impose this agony on myself in an effort to dispel some of the myths surrounding HIV-positive people... During my presentation, information that would usually be regarded by journalists as a 'juicy story' was instead treated as a moving commentary. On the admission of some of the journalists, my presence and commentary were edifying and represented their first opportunity to understand the plight of HIV-infected persons."

A WOMAN LIVING WITH HIV [39].

CREATING A SUPPORTIVE ENVIRONMENT

When sex workers in Calabar, Nigeria, wanted their customers to use condoms, they failed to get support from the people who influence their working conditions, such as hotel owners, managers and chairladies (head sex workers). The Cross River State AIDS Programme (CRSAP) therefore approached them on the sex workers' behalf.

A special STD clinic was established to serve the women near their working sites. Collective actions were fostered to protect the sex workers' interests. The hotel managers and chairladies began backing the women's demand for higher fees and their right to refuse clients who wouldn't use condoms. The sex workers also were able to retain fees when clients attempted to renege on condom use. Harassment and extortion by security agents decreased, too.

The women reported more confidence in handling problems with clients, hotel owners and the police. They also organized a self-help group called Nka Iban Uko (Women of Courage), which focuses on skills training and services for their children [40].

create conditions for effective prevention and care need expansion. Besides serving as a channel for information on HIV/AIDS and STDs, the media can mobilize public support for gender-sensitive programmes by highlighting the effects of the epidemic on women. Media workers may also be enlisted to help create a climate tolerant towards those affected by or responding to HIV/AIDS.

Policy-making and agenda-setting

To ensure broad-based support, all agencies and government ministries must add HIV/AIDS and STDs to their action agendas. In this way, alliances for policy-related advocacy as well as new initiatives will arise at the national and community levels:

- After a national workshop in Malaysia where women were trained to organize HIV/AIDS awareness workshops, such meetings were held even in the most remote parts of the country. By linking women's umbrella organizations, duplication of effort was avoided and time and money saved [41].
- In England, regional seminars were organized on the theme "Women, AIDS and the Future" in collaboration with local women's organizations. Activities carried out by participants afterwards included: reporting on HIV/AIDS to local organizations; planning similar seminars in their area; talking with men, family, friends and colleagues about HIV/AIDS; writing advocacy letters to government ministers; holding study days/meetings with church groups; and writing articles for the press [42].
- The Society for Women and AIDS in Africa (SWAA) raises political

awareness concerning gender in relation to HIV/AIDS and STDs and provides a voice for women in many parts of the continent. SWAA has national member organizations in more than 20 countries.

RESEARCH

Biomedical studies – e.g., on opportunistic infections in women and ways to reduce perinatal transmission (including through breastfeeding) – are increasing in scope but need expansion. More support is required for research on female-controlled methods to prevent HIV/STD infection, including the female condom. The current research priority is to develop microbicides, which appear to have great potential for acceptance. Other important topics for a gender-sensitive research agenda include:

- barriers to female control over HIV/STD risks and ways to overcome them
- how young women and men define personal risk in relation to different types of relationship
- how men and women currently protect themselves against infection
- barriers to female and male STD treatment and how to improve access
- improving contact tracing for STDs
- the effects of HIV infection during various phases of a woman's life cycle (e.g., in relation to onset of menstruation and menopause)
- the appropriateness of counselling messages and methods in meeting women's and men's specific concerns
- partner notification, confidentiality and information sharing
- the division of labour concerning reproductive and productive tasks at the household and community levels and how these contribute to maintaining women in their current lower status and increase their burdens related to care.

NGOs and research institutes have not waited for international leadership and donor funding to undertake studies in these areas. Research must be demystified so that more local organizations develop their own research agendas. Some of the most useful findings come from simple

Participatory action research by community members can explore differences in knowledge as well as use of information sources, traditional communication channels and inter-generational communication. (Photo: Photo Bureau, KIT)

small-scale studies, especially when their results are linked directly to the implementing service agencies.

Exciting developments are taking place through participatory action research in which community members explore topics such as differences in knowledge and information sources for boys and girls, traditional communication channels used by women and men and intergenerational family communication. The findings indicate how educational programmes can be better structured and channelled.

Dissemination of research results urgently needs expansion. This can be facilitated by linking researchers and NGOs. The International Center for Research on Women (USA) worked with Comprehensive Health for Women (SIPAM) and the Programme in Gender Studies of the National Autonomous University in Mexico to document and analyse their studies and programmes on women and AIDS. A forum held to discuss the results with NGOs, researchers and government institutions resulted in the formation of a permanent researcher-NGO network [43].

Establishment of "inter-country" projects is another approach. For example, FEIM in Argentina and the Movimiento Paulina Luisi in Uruguay together planned action research and an intervention to increase gender awareness and prevention possibilities for poor and lower middle-class women [44]. They then compared their findings, identifying concerns that are country-specific and broader in scope.

Donor organizations can contribute to dissemination of research findings by funding the publication of research reports and researchers' participation in national and international meetings. Many UN agencies have distribution channels that might be expanded to include dissemination of studies carried out by governments and NGOs.

FACILITATING ACCESS TO INFORMATION AND SERVICES

Information dissemination

Printed materials can be improved by involving women and men in creating more appropriate messages and materials that address their specific concerns. Funding is also needed for translation of texts into local languages to allow greater access to printed information.

Including HIV/STD information in a variety of health programmes, such as mother and child health and family planning, reaches more people. The Guatemalan Association for the Prevention and Control of AIDS conducted educational sessions and small-group workshops on health and sexuality, self-esteem, partner communication and communication with adolescent children for women waiting at antenatal clinics [45]. Fears that discussions about HIV/STDs would cause the women to worry, increasing their stress levels during pregnancy, appeared unfounded. On the contrary, women reported that they felt relaxed and less apprehensive in talking about condoms, infidelity, STDs and AIDS with their partners. More than half of those interviewed postpartum said they shared written materials with their partners.

Information channels other than health services are also available. Traditional community counsellors, women and men's associations, church-based groups, sports and recreational clubs provide entry points for individual and group educational sessions. Other possibilities

REACHING OUT TO WOMEN

Both existing and new communication channels can be used to reach out to women and girls.

TRADITIONAL ASSOCIATIONS

*The Cheikh Anta Diop University in **Senegal** mobilized members of a well-respected women's association, the Dimba, to help organize community education sessions. Dimba membership is restricted to women who coped well with difficult circumstances, like infertility problems, repeated miscarriages and adopting orphans. They are influential because their members have thorough knowledge of women's and infants' illnesses. The University also worked with women of the Laobe ethnic group, who provide advice about reproductive health and sexuality. Laobe women are traders who make and sell products designed to enhance sexual pleasure; they were persuaded to sell condoms as an erotic product [29].*

ADOLESCENT GIRLS

*World Vision designed a sex and family education programme for low-income adolescent girls in Bombay, **India**. The girls had little information about reproduction and almost none about HIV/STDs. They seemed trapped in a "culture of silence" that did not permit them to voice their opinions, feelings or concerns on any issue.*

Parental and community support were essential to permit the girls to participate (e.g., providing child care for younger siblings). A community AIDS/STD awareness programme was therefore implemented, including meetings with mothers, teenage boys and young men, and a street play dramatizing women's status at different stages in life. The meetings stressed the value of educational interventions for the girls.

Topics discussed with the girls included: being a woman, female puberty, sexuality, sexual exploitation and harassment, health problems (with specific reference to HIV/STDs) and the development of an action plan to protect oneself against infection. The programme had to encourage the girls to talk. As the sessions progressed, they became more self-confident, freely voicing their opinions, suggestions and criticisms. The feedback was very positive, with the girls asking for more sessions [46].

WOMEN PRISONERS

*"My partner used a condom because he saw the signs on my arms. That hurt me. Now I know something more about AIDS and I have changed my mind: I think that he did the right thing because both of us ran less risk." This comment came from a participant in the "Women, AIDS, Information" Project at the women's prison Le Nuove in Turin, **Italy**.*

The 3-month project was initiated at the prisoners' request. The project team helped the women discuss HIV-testing, how to reduce infection risks and how to live with seropositive persons without fear or rejection. The women then developed a story that could be used as the basis for a video.

The intervention enabled the women to share their experiences as equals and realize they were capable of carrying out such a project. They began discussing the possibility of having relationships with other groups working on AIDS both inside and outside prison [47].

include labour and trade unions and groups participating in agricultural and small-enterprise projects. Training peer educators has proved particularly effective among women from various walks of life. NGOs have further explored ways to reach women whose mobility is restricted, e.g., girls living in slums and female prisoners.

Reorientation of services

NAPS, local governments and NGOs are reorienting services to better meet the needs of women and men. They are providing information and

Reorientation of services is required to better meet the needs of women and men (Photo: Roel Burgler)

condoms to men and women at sites they regularly visit (e.g., clubs, cafés, hairdressers). Clinics are being located where people live (e.g., STD clinics located in sex worker districts, mobile clinics). This enables people to acquire what they need without much effort.

- A programme in Haiti, which sells condoms in places where women feel comfortable buying them, aims to give women skills in negotiating social and cultural barriers to condom use. Product packaging is discreet, with advertising stressing women's right to control their sexuality [48].
- Government and NGOs in Calcutta, India, have increased female sex workers' access to STD services and health care for their children by opening a general health clinic in a local youth club. The clinic runs during the day and the club at night. Peer educators participate in outreach activities [49].
- The Filipino NGO Kabalikat provides comprehensive services to female, male and youth sex workers by training peer educators, running a drop-in centre, offering short-term shelter and nutritional support and providing medical and residential care to those who need support [50].
- In Colombia, PROFAMILIA runs male family planning clinics, emphasizing that family planning is a right. The men are offered general counselling, STD/HIV diagnosis, vasectomies and a free hotline. The programme has resulted in more early consultations related to STDs and increased condom use [51].

These types of programmes need to be replicated, along with increasing efforts to make the female condom and spermicides more accessible and affordable.

STD diagnosis and treatment are of special importance since STDs increase vulnerability to HIV. Because most STD diagnostic tests are too

costly or require equipment unavailable at the primary health care level, WHO recommends syndromic management based on the identification of collections of STD signs and symptoms (syndromes). Any woman presenting with a particular syndrome is treated for all STD infections commonly associated with those symptoms.

To increase the accessibility and acceptability of STD services, stigmatization and the negative attitudes of staff must be reduced. Contact tracing procedures guaranteeing confidentiality also need further development.

In Mozambique, STD treatment is de-stigmatized by showing it is for all community members.

CHANGING THE WAY WE THINK AND ACT

Programmes can facilitate community exploration of how gender is related to prevention and care by addressing the following kinds of question:

- *Beliefs*: how can people be assisted to re-examine ideas related to HIV/AIDS/STDs and sexuality which hinder prevention, e.g., men need to release semen to stay healthy, women must receive semen to promote an unborn baby's growth?
- *Relationships*: how are relationships defined, e.g., what kind of contact do the partners have in casual, regular and other types of relationship? What makes a relationship good? Who usually makes decisions in relationships? What circumstances in relationships increase or decrease risks of HIV/STD infection?
- *Sexuality*: why, with whom and in what circumstances do women and men engage in sex? What needs and desires do women and men have regarding sex and what do they understand of each other's needs? What types of sexual practices and needs are or are not considered normal and why? How do various aspects of sexuality affect risks of HIV/STD infection?
- *Power between women and men*: how should power relations between women and men be changed? How can women gain greater control over their lives and situations contributing to their risk of HIV/STD infection, e.g., condom use, types of sexual activity, extra-marital sex?
- *Care and support*: who provides what types of care and support to family members and needy people in the community? Why is caretaking divided between women and men in a particular way? What needs to be done to ensure that women and men both participate actively in providing care and support?

CREATING GENDER AWARENESS AND BUILDING SKILLS TO ACT ON IT

Around the world, communities are becoming more conscious of gender issues and acting to address them:

*Women, Children, Citizenship and Health (MCCS), an NGO in São Paulo, **Brazil**, recruits women for sensitization workshops from mothers' clubs, unions, political parties, professional associations, community groups and feminist organizations. MCCS adapted its approach to safer sex when it was recognized that family planning programmes have emphasized use of "long-term" and "inexpensive" methods, such as sterilization and the pill. Barrier methods, such as condoms and spermicides, are frequently identified as inefficient, inappropriate for lower-income groups and too complex for use by uneducated persons. MCCS encourages women to think about contraception in relation to HIV/STDs in the broader context of their overall health [52].*

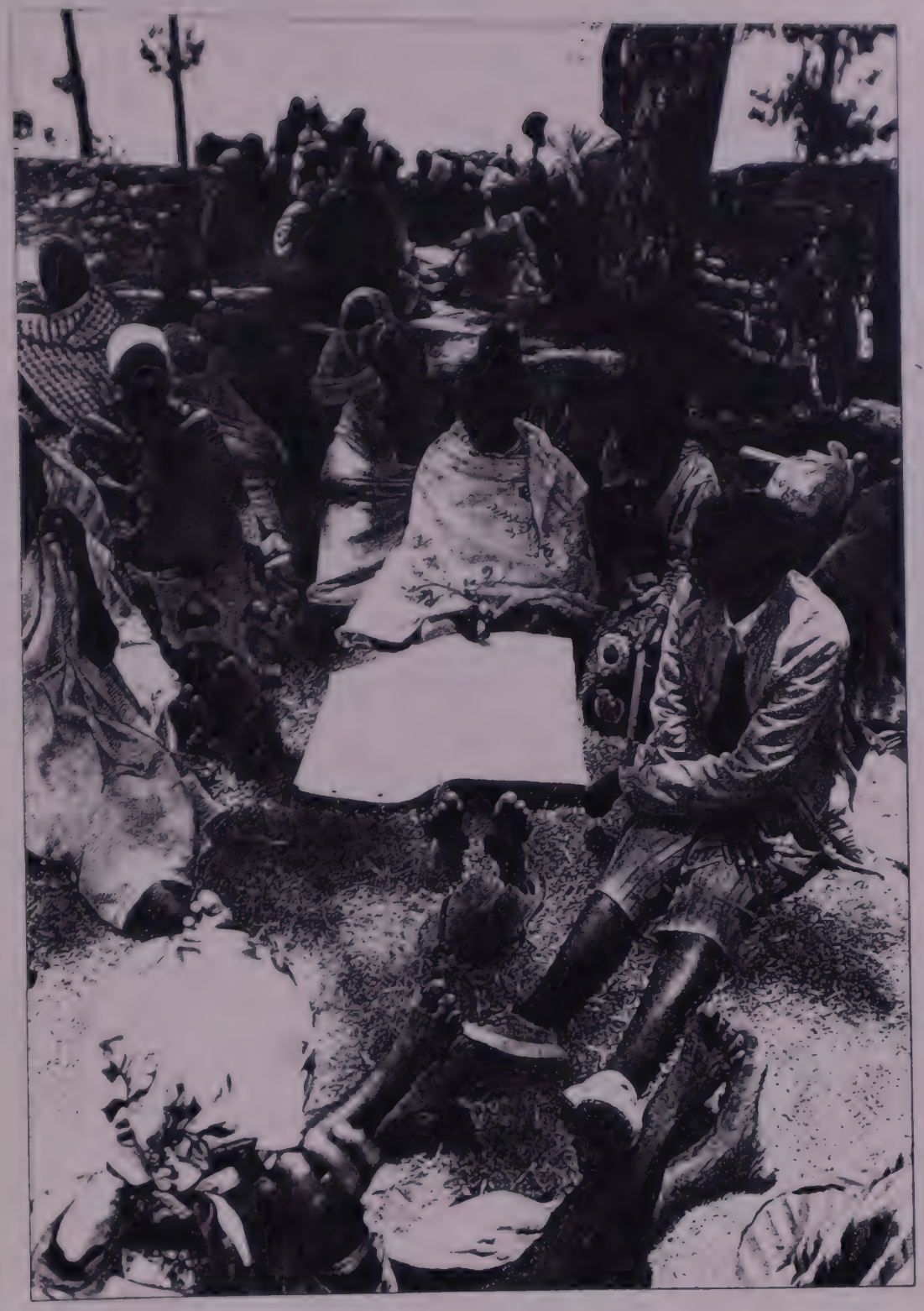
*Julliet Awino, a widowed mother in **Uganda**, stars in "Strings Attached", a play portraying her personal experience with HIV/AIDS. It emphasizes practices that undermine women's role in society and the home, making them vulnerable to HIV transmission, such as: male pre- and extra-marital sexual activity, hostility from in-laws who blame wives for family problems, abandonment without rights and property if a woman refuses sexual "ritual cleansing" when she becomes a widow.[1] The drama has contributed to an increase in people writing wills to regulate inheritances [53].*

*In Kalabo, **Zambia**, women aware that girls in their area were especially vulnerable to HIV formed a committee to focus on communal attitudes towards sexuality and behaviours affecting women. They organized seminars for more than 600 women, through churches, hospitals and health centres, to stimulate extensive community discussions about female sexuality and gender roles. As a result, the traditional initiation ceremony for girls was revised to include information on reproductive health and HIV/STDs [54].*

*In **Mali**, a primary health care project (SSP-Ségou) and programme focused on improving women's status (PROFED) generated discussions on gender and sexual health among the general community and young women in particular during a needs assessment study. To break down barriers against discussing sexuality, they developed a drama with the villagers about a woman who has problems giving birth. It was acted out for the entire village, following an introduction by a male village leader concerned about women's situation. The audience became highly involved, worrying about the sick woman and giving advice to the husband. In this climate male and female researchers could address all kinds of topics from the perspective of both sexes. Some previously taboo subjects, like the negative consequences of female circumcision and sexual violence against women as a risk factor for HIV/AIDS, were dealt with publicly for the first time. The group discussions were geared towards analysing the villagers' problems and mobilizing them into action. The first step was to re-establish a village pharmacy [55].*

[1] *Ritual cleansing is a custom among some African cultures wherein the spouse of a deceased man or woman has sexual intercourse with a member of the spouse's family in order to allow the dead person's spirit to attain rest; it also ensures that the spirit will not bother the surviving spouse.*

Participatory group methodologies increase awareness and motivate adults and youth to devise solutions to the gender-based problems they identify. Skills building needs to be an important component of such approaches so that women and men learn how to talk about sex and relationships, resist pressure from peers and partners to engage in unwanted practices and stand up for their rights (e.g., resisting service providers' pressure to have an abortion or sterilization). The capacity to



Community work is helping women and men explore gender issues through exercises which "map out" risk situations in their villages (Photo: Roel Burgler)

practise such skills is based on a sense of self-worth, a perception of oneself as capable and assertive. Examples of approaches that build self-esteem and gender awareness include:

- using drama and visual arts to help women "discover" their abilities and talents
- role-play (e.g., to develop safer sex negotiation skills)
- vocational training and education (e.g., production skills, relating skills, managing skills)
- peer education programmes.

Changes in attitudes need to begin in childhood. Although parents are expected to play the primary role, in many societies talking about sexuality and related issues between parents and children is difficult. A study in Zimbabwe, for example, found that parent-child communication is severely limited, especially in the case of fathers, who are often absent, remote and moody [56]. Research in Mexico showed that adolescents want more communication about sex with their parents than they actually have. Obstacles included parental time/work constraints, not being

Changes in attitudes must begin in childhood (Photo: Roel Burgler)

able to reach agreement, lack of trust and knowledge and embarrassment [57]. Such studies indicate that parents want help to improve their ability to communicate, for instance, through NGO and church training activities for couples.

When questioned, many parents indicate they are willing for others to deliver prevention messages to their children as long as they are informed about the content. Media campaigns can help create a supportive environment for this. NGOs and schools can offer courses and activities for schoolchildren and out-of-school youth that explore gender relations, values, sexuality and related issues. Stressing the effects of positive as well as negative peer pressure is an important component of such programmes. As few teachers and youth workers have been trained to deal with such subjects, organizations such as UNICEF, WHO and UNESCO, as well as NGOs, are assisting governments to develop appropriate materials and training programmes for them. Training of youth peer educators has also shown promising results

HELPING YOUNG PEOPLE

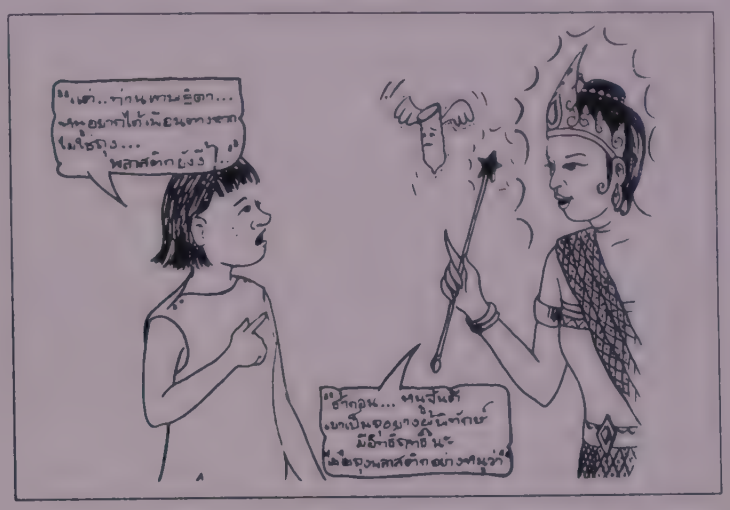
Two programmes in Asia and Africa are teaching young people the skills needed to insist on safer sex. One programme focuses on pre-marital abstinence and fidelity within marriage and the other on condom use.

Care International in Kenya promotes respect for girls in a publication for schoolchildren

In **Africa**, Aid for AIDS fosters the creation of positive self-images among boys and girls, emphasizing respect for girls. "It's great to be a girl" is an attitude crucial for boys and girls to absorb. The programme uses drama, role-play and discussions to teach young people how to resist peers who try to make them do things they don't want to do. The idea of positive peer pressure is promoted through Anti-AIDS Clubs, in which friends help one another stand by mutually agreed behaviours, e.g.: 1) We will make friendships with lots of other boys and girls more important than "pairing off". 2) We will commit ourselves to avoid sex before marriage. 3) We will especially help and care for any of our friends who have HIV infection.

The University of Chiang Mai in **Thailand** developed special materials for young female factory workers. Research had shown that a lack of communication between women and men, reluctance to discuss condom use ("men's business") and misconceptions about moral goodness and AIDS (if someone looks and acts good, they are perceived as HIV-free) were major obstacles to prevention. Two booklets with discussion starters addressing these factors are used by female peer educators trained to facilitate group discussions and lead group activities.

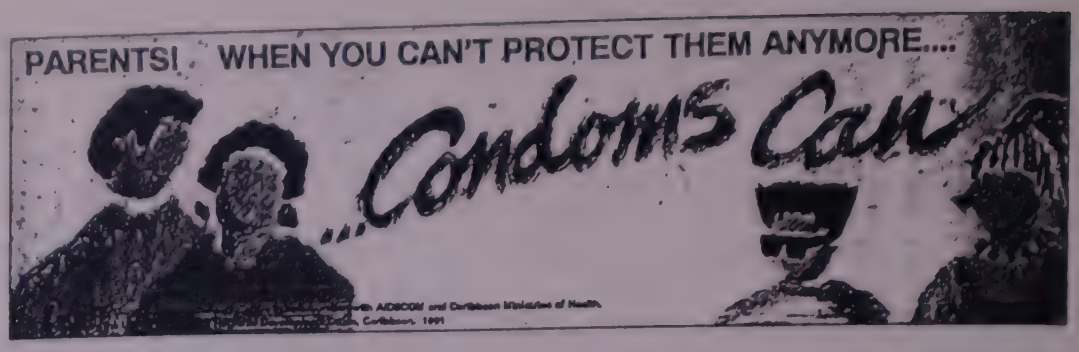
A romantic illustrated novel shows the consequences of not discussing sexual behaviour. It tells the story of factory worker Lamyai, who falls in love with Tong Dee. Because he is good, she doesn't ask about his past. Despite warnings from a co-worker, they have unprotected sex. When Tong Dee enters military service to earn money for their marriage, he is tested and found HIV-positive; Lamyai also has the virus and, after working on for a few years, eventually dies.



A Thai comic book uses humour to persuade young women to discuss condom use

To demonstrate what girls can say to negotiate condom use, a humorous comic book focuses on a young woman named Jon Di. Before she leaves to work at the factory, Jon Di prays to the Spirit of Good Health: "Please turn something near to me into a living thing – to be my friend – to protect me when I go to Chiang Mai." The Spirit does so, producing Brother Protector Condom, an invisible flying condom. The Spirit promises that if Jon Di and Brother Condom save five young women from AIDS, she will make Brother Condom into a real friend. Jon Di completes the assignment successfully, whereupon the Spirit changes Brother Condom into a young man with a condom head. After protest from Jon Di, the Spirit makes him a completely human companion.

DAVID CUNNINGHAM, Zimbabwe,
KATHLEEN CASH, BUPA ANASUCHATKUL and
WANTANA BUSAYAWONG, Thailand

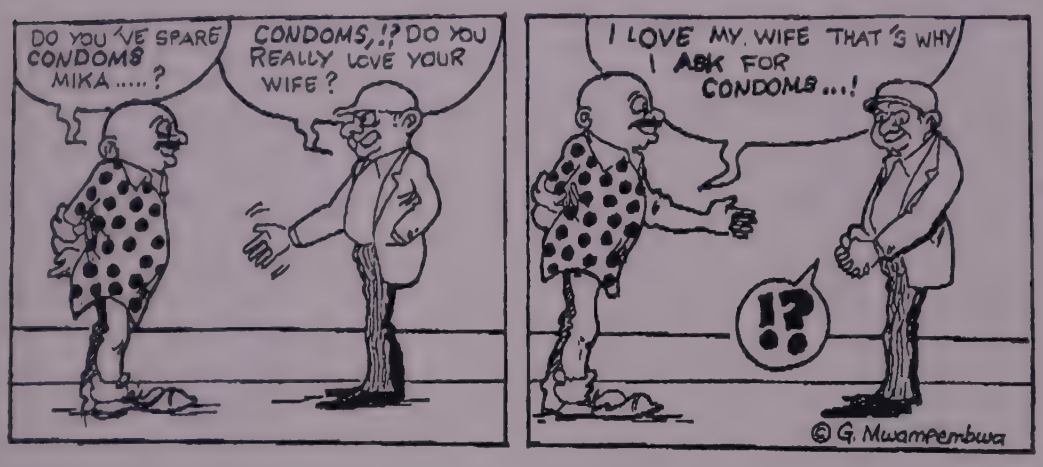


An NAP campaign in St. Vincent and the Grenadines urged parents to accept condom use for teenagers

SENSITIZING AND MOBILIZING MEN

Men must be sensitized and mobilized to a greater extent for an effective response to HIV/AIDS and STDs. Since men occupy most positions of influence, their participation in advocating gender-sensitive policies and programmes is essential.

Comics published in African newspapers urge men to protect their partners



Some men are, of course, already aware in this regard. Others, however, have not yet thought about the factors placing women at a disadvantage. A Filipino NGO, HASIK, has developed a gender training programme for male staff in various types of organization to address this [58]. Through games, exercises, song, dance and discussions, the men articulate their own ideas about why women are oppressed. Then they address how to change the institutions that determine gender roles, concluding with the formulation of action plans which help the men translate what they have learned into organizational/professional goals and schemes.

The collaboration of village headmen, male religious authorities and businessmen in educational interventions and home- and community-based care is most important. They act as role models for the community and can set the example for acceptance of "new" ideas concerning men's and women's responsibilities in preventing HIV transmission and coping with AIDS.

ENLISTING INFLUENTIAL MEN

The Thai Health Project for Tribal People (HPTP) has trained influential male community leaders as health educators for isolated hill tribe communities. The headmen, who also act as village counsellors, already have the respect, position and credibility necessary to promote new information. They are also experienced in talking to large groups.

The training seminars include practice teaching sessions. One headman, for example, used a picture of a young girl being sold into sex work to talk about the man who had taken her away and what happened to her once she was in town. HPTP teams visit the headmen several months after the seminars to ask about any problems they have using the materials and what is going well.

Knowledge changes are occurring in villages taught by the headmen. In one tribe, the initial survey showed that 85% of the people had heard of AIDS, but none understood that it could be transmitted from mother to child. After teaching by the headman, 98% of the villagers understood this.

LORI ROWE, *Thailand*

ADDRESSING MEN'S PREVENTION CONCERNS

Two projects in the Asia/Pacific region have demonstrated how men's specific concerns around HIV/STD prevention can be addressed:

The AIDS Research Foundation of **India** (ARFI) works with sex-worker clients in Madras, emphasizing the health benefits of condom use. Truck drivers keep condoms in their trucks to fix radiator hose leaks. ARFI used this practice to start small groups talking about how "leaks during sex" can be fixed. Condoms are provided through transit-stop shops, where they are sold together with items men frequently buy. The truckers also receive key chains containing a compartment for a condom. Since most of the transit-stop teashops play music, a cassette on safety (both on the road and at roadside), "It's all in the rubber", has been distributed with funds from a truck tyre manufacturing company.

Peer opinion leaders tell port/dock workers a story about a man who practises safer sex. To reinforce the message, posters on condom use are displayed in wine shops and barber shops, where the dock workers read the evening newspaper. Some men have been recruited as condom depot holders; a dispensary at the port provides free STD services. Short street plays reinforce the safer sex message. Since the programme started, condom sales have increased at the transit-stop and port shops [59].

The Heterosexual Men's Project in New South Wales, **Australia**, conducted focus-group discussions with building workers aged between 17-60 years to determine what was important to them in preventing HIV prevention. The groups comprised men from English- and non-English speaking backgrounds and included single, divorced, separated and single men, men in long-term relationships and fathers. Two issues highlighted by the workers were the role of alcohol in promoting unsafe behaviour and difficulties in communicating about sex with women.

Based on the men's suggestions, a campaign was designed using messages on beer coasters and toilet stickers in pubs and clubs. The beer coasters used

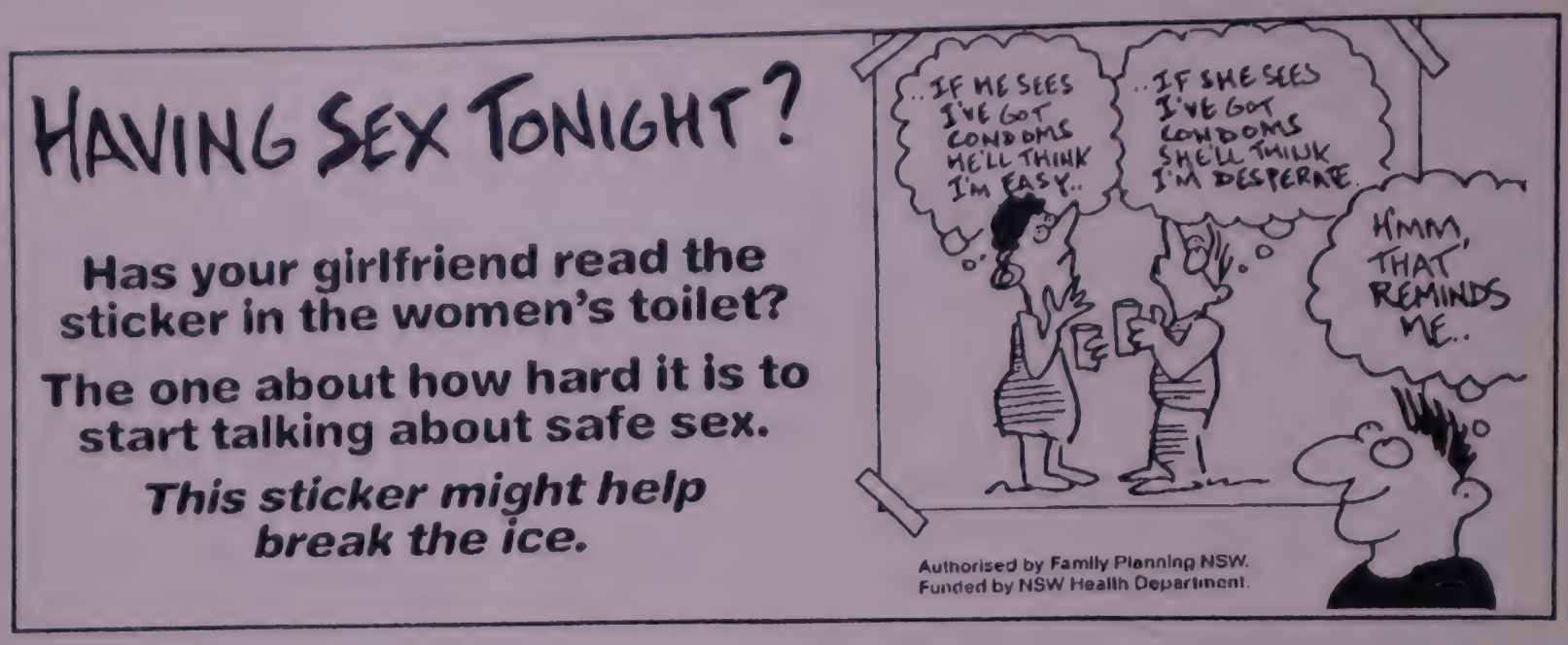
CURIOUS MOMENTS
NO 107
I'M JUST POPPING OUT TO BUY SOME CONDOMS, WHAT SIZE DIYOU TAKE?
EXTRA LARGE. WELL, LARGE. WELL, LARGISH. WELL, MEDIUM WELL, JUST A BIT SMALLER THAN MEDIUM. OH ALRIGHT, SMALL. EXTRA SMALL. IN FACT, MINISCULE. TEENY WEENY.
mik

Beer coasters (mats) in Australia use humour to challenge male sexuality myths

"themes" to demystify safe sex and challenge some male sexuality myths. The toilet stickers aimed to facilitate discussion of condom use between men and women by providing humorous ice breakers. Billboard, bus and magazine advertising messages addressed the link between STDs and HIV/AIDS.

Evaluation showed that 50% of the men familiar with the campaign saw it as personally relevant: 19% of those who had read the beer coasters and stickers said they were helpful in providing conversation starters on safe sex with their partners; 27% said it led them to discuss this with their colleagues. Generally, the campaign messages were best recalled by men 18 to 24 years old, single men and condom users. Recommendations made for future campaigns included:

- tailor messages to emphasize that condoms promote health rather than prevent disease
- employ humour to challenge aspects of male culture that do not support safer behaviour
- develop dynamic and flexible approaches to address men's sexual health needs in the context of changing life roles
- use medical centres, youth services and sexual health centres to provide information and resources
- use the media, particularly men's magazines, to support sexual health education
- locate future campaigns in venues where alcohol is consumed such as clubs and pubs [60].


HAVING SEX TONIGHT?
Has your girlfriend read the sticker in the women's toilet?
The one about how hard it is to start talking about safe sex.
This sticker might help break the ice.
..IF HE SEES I'VE GOT CONDOMS HE'LL THINK I'M EASY..
..IF SHE SEES I'VE GOT CONDOMS SHE'LL THINK I'M DESPERATE.
HMM, THAT REMINDS ME..
Authorised by Family Planning NSW.
Funded by NSW Health Department.

Wall stickers in Australia aimed to help men address HIV/STD prevention with their female partners

Information and behavioural change programmes specifically targeting men and boys need replication. Objections that men are hard-to-reach have been disproved by experiences worldwide. Men can be approached through workplace programmes at businesses, factories and settings such as military compounds. Others are targeted by interventions for sex workers' clients, school-based programmes and activities carried out through churches and recreational groups. Strategies aiming to help men examine current male and female social roles and the benefits of changing these in relation to HIV and STDs need more development.

COMBATING DISCRIMINATION

Women and men living with HIV/AIDS, their families and people negatively associated with the epidemic (e.g., homosexuals, sex workers, street-children, migrants and foreigners) still face stigmatization and discrimination. Combating this is an important public health strategy. If people are to engage in safer sex, they must feel confident that they will not be abused or abandoned by their partners. If potential care-providers condemn those living with the virus, adequate care and support cannot be given and the burden of care will be borne by a few.

One of the reasons why stigmatization arises is that AIDS programmes appear to suggest that some categories of people (e.g., gay men, sex workers and migrants) are more likely to get AIDS than others. This may be partly true from the epidemiological perspective but NAPS need to present the epidemic to the general public in a way which does not reinforce such perceptions.

Educational messages can emphasize the need for solidarity with those who are discriminated against. A first step is to explain how HIV is and is not transmitted, debunking myths and associated fears. These messages can be communicated through printed materials, newspaper and magazine articles, radio and television programmes, community education sessions, hotlines and word of mouth. Health workers should be taught the principles of universal precautions that should apply to blood and body fluids from all patients, not only those they know or suspect to be HIV-infected.

Personalizing the epidemic also works well: when people tell

their stories, they provide concrete examples rather than distant images of "AIDS victims" or "HIV carriers". The first woman to speak out publicly in the Philippines greatly increased the impact of the NAP campaigns, helping raise the general public's awareness in a positive way. Persons living with HIV are often in the forefront of actions to challenge discrimination. A woman working for a care agency in Canada, for example, sued her employer after she was dismissed because her serostatus became known. She won her case, simultaneously giving other seropositive women encouragement to stand up for their rights [61].

NGOs can play a useful "watchdog role" regarding human rights violations. The International Gay and Lesbian Human Rights Commission, for example, publishes an *Action Alert* bulletin to publicize discrimination and stimulate responses to specific abuses. Amnesty International and many NGOs document discrimination cases so that these can be brought to the attention of the government and press. Lobbying for changes in discriminatory laws and the passage or endorsement of protective ones (e.g., the UN Convention for the Elimination of All Forms of Discrimination against Women) is another important action area. Many NGOs also publish HIV/AIDS rights charters and refer persons suffering discrimination to legal services so that they can pursue their rights.

Further work must be done to change customary and written laws so women have legal recourse in cases of abuse, loss of maintenance and discrimination over inheritance. Many women are unaware of their rights and don't know that they are legally protected against certain abuses. This knowledge gap is slowly being filled by lawyers' groups and NGOs worldwide through "legal literacy" programmes, making the law accessible to women and promoting their capacity to understand and assert their rights [62].

DEVELOPING GENDER-SENSITIVE CARE AND SUPPORT

A first step towards making care and support systems more sensitive to the specific needs of women and men is to re-evaluate

PROMOTING LEGAL LITERACY

» *"Ugandan women have almost the same rights as men according to the law books, but in reality tradition rules", says Winnie Sekadde of FIDA, a legal aid organization for women in* ***Uganda****. "It means for example that they have no right to property and income."*

The HIV/AIDS epidemic has presented FIDA with a growing number of cases regarding property and succession rights, although maintenance money is still the biggest issue. "Women get into trouble when their husbands die because of the gap between traditional customs and official laws. Women in rural areas are not aware of the written laws. Even if they are, the pressure to comply with tradition is enormous."

According to the traditional customs, when a woman marries, her father receives a bride price from her husband. She then belongs to her husband's clan. She must take care of his household and work his land; any earnings go to her husband. "Women are economically and socially completely dependent on their husbands," Sekadde says. "If a man dies, she loses everything to his clan, even the right to custody over her children."

According to written laws in Uganda, women have a right to their own income and a small inheritance. In practice, however, women almost never get this. The amount is divided if a man has more than one wife, which is common in Uganda. Other family members can also claim possessions. In case of doubt, judges may also fall back on customary law, often to the detriment of women. FIDA is therefore lobbying for a women-friendly law, with fewer opportunities for interpretation by judges.

Because not many women know about laws, FIDA educates them through village seminars, radio and television programmes and newspaper articles. FIDA has also formed a team to persuade villagers to write wills.

Cases relating to sexual abuse of children are increasing. Children are regarded as "safe partners" because generally they are not yet infected. Girls have been abused by grandfathers, uncles and teachers. To make pupils aware of these problems, FIDA performs education theatre at schools [63].

policies and assess whether they are gender sensitive. Training programmes for care-providers and counsellors need adaptation so that, for example, they respect women's wishes and needs regarding pregnancy, breast-feeding, abortion and sterilization and deal with the potential negative consequences of testing women but not their partners for HIV.

Follow-up counselling and support for women and men living with HIV/AIDS requires expansion. Social and legal assistance must be available even when people cannot pay. Women's lack of money worsens their burden when they care for family members and yet lack care for themselves, especially if the husband dies first. Seropositive women especially need ways to generate an income despite suffering periodic bouts of illness: "When my husband died of AIDS, I found it difficult to make ends meet. I decided to grow tomatoes, but did not have enough money to start the project. When I had almost given up hope, I got into conversation with some women in my village who were in a similar situation as myself. One of them suggested we pool our resources to support one another. The plan worked out quite well. I am now able to take better care of myself and my family. Our group's plan also ended up being an inspiration to other women in the village" (Tanzania) [64].

*» Communities in sub-Saharan **Africa** recognize that as more households are affected by the epidemic, community life suffers unless affected women and children are supported in coping [65].*

*» In Rakai District, **Uganda**, men developed an income-generating project to help them support 26 children orphaned due to AIDS. They registered as an association and received training and a loan from the NGO World Vision for a bee-keeping project. In their first season, the association harvested nearly 25 litres of honey to raise funds needed to help them in their role of care-takers.*

*» The University Teaching Hospital in **Zambia** used to test children suspected of being HIV-positive, then gave the test results only to mothers. Fathers who later learned their children were HIV-positive blamed the mothers and refused to be tested themselves. SWAA helped change this policy. Now, when children show clinical symptoms suggesting HIV infection, the parents are called in together for counselling and both parents and child are tested simultaneously. The test results are given to the parents together during additional counselling. This process has reduced blaming and tension between spouses.*

Because much of the care and support for people affected by HIV/AIDS now falls on women's shoulders, a major task is to find ways of lessening women's extra workload. One way is to provide help with home-care nursing. In south Thailand, nurses are assisted by La Trobe University (Australia) in sharing skills with village women so that they can manage those sick with infectious diseases (including HIV/AIDS and STDs) more effectively and efficiently [66].

Analysis of successful programmes is needed to determine what it is that motivates people (especially men) to volunteer their time, energy and resources to community- and home-based care and support.

Men's collaboration in AIDS care needs further encouragement (Photo: Roel Burgler)

Insights then need to be shared widely so that new initiatives can benefit from them and volunteer support can be maintained long term.

LIVING POSITIVELY WITH HIV/AIDS

Women and men around the world often feel isolated when they learn of their diagnosis. Women especially have difficulties in contacting peers in the same situation. Yet this provides great psychological benefits: "When the woman at the clinic said, 'Would you like to meet another woman with HIV?' and gave me her phone number, I couldn't wait to get home... As soon as I met her, it just changed my life. I realized I hadn't done anything wrong, I wasn't a criminal... We've formed a women's group... I can talk about problems that have happened. Not just to do with HIV... Just supporting each other, having good fun, having a laugh" (England) [67].

Associations of women living with HIV/AIDS are helping participants find ways to cope. They also give the epidemic a human – and female – face when their members speak out on how HIV/AIDS affects them. In 1992, the International Community of Women Living with HIV/AIDS (ICW) was created at the International Conference on AIDS in Amsterdam. Since then, this coordinating body has provided women most directly affected by the epidemic with a voice at global and regional levels. Through a network of worldwide representatives, they provide policy input to UN agencies.

ICW has also inspired the formation of associations of seropositive women in many other countries. At the national and community levels, seropositive women are joining together to make the ideal of living positively with the virus a reality:

- The National Women and HIV Project in Canada created a coalition of HIV-positive women by supporting regional networks and developing communication tools [68].
- The Argentine Network of Women Living with HIV/AIDS (ANW) gives women information about AIDS, helps access treatments and medications through state and private services and makes referrals to NGOs and governmental social services [69].

– Many seropositive women who care for their households alone must also plan for their families' future, especially the children. Due to discrimination and frequent illness, their access to the labour market is also restricted. Women Touch in São Paulo, Brazil, helps provide them with work, an income and special protection [70].

Such initiatives demonstrate that women and men living with HIV/AIDS are not the problem but part of the solution. To prove we truly care – not only in the sense of *caring for* but also *caring about* people living with HIV/AIDS – we must ensure that our response to the epidemic gives these women and also men a central role in policy and programme formulation, implementation and evaluation.

A PERSONAL TESTIMONY

"I became pregnant with my fourth child in 1988. My health deteriorated and I had persistent vaginal itching and abnormal pains. I complained during antenatal check-ups but didn't get proper treatment for my vaginal infection. They took my blood for an HIV-test without my consent.

After I delivered, they tested my child, too. Then the doctor just told me that they had taken our blood and the results for both of us were positive. When I broke the news to my husband, he left me that very same night, after calling me names and accusing me of being unfaithful and a prostitute. I later learned that he had already been tested and was HIV-positive but didn't have the courage to tell me.

I confided my HIV status to my sister, a nurse. Because of stigmatization and discrimination, she told me not to tell anyone else. I kept quiet but felt as if everybody knew that I was HIV-positive. I was so lonely, isolated and afraid of leaving my children without any information on AIDS. I spent most of my time crying and the loss of my child at five months made my condition worse. Fortunately, I didn't have to give up my job because it was my only source of support.

In 1992, I was invited to attend a conference organized by Dutch seropositive women. I accepted though I was afraid to talk about my status and had never been involved in AIDS activities. I went because I wanted to meet people who were also dying of AIDS. But I was wrong about that. The conference gave me self-confidence and courage to talk about my status to friends and family, including my children and co-workers.

Back home I began giving my personal testimony during workshops, seminars and on national radio. I introduced the idea of forming a support group for women whose husbands had died of AIDS because I saw many widows who were suffering from property-grabbing by the relatives of their deceased husbands. At first we met just to share our personal experiences, give each other moral and psychological support and break our isolation and fear.

Eventually, we established the National Association of People with HIV/AIDS in Malawi (NAPHAM) with the aim to promote health through self-care and support. We care for one another when one falls sick and are now trying to involve our families. Most of the women are poor housewives. NAPHAM therefore promotes self-reliance through income-generating activities. By making soap and raising chickens we are able to pay school fees for some of our members' children.

I know God is keeping me for a purpose which I yet have to fulfil. Today I am in the eighth year from the time I was diagnosed. I'm still living because I have a will to live and want to help those who are suffering as I did."

WINNIE CHIKAFUMBWA, *Malawi*

How gender sensitive is your work?

The enormous cost and suffering caused by the HIV/AIDS epidemic is forcing serious re-evaluation of norms, values and conditions related to gender. Such analysis may lead to fundamental improvements that can benefit millions of people – women, men and children – in societies around the world.

The following checklist is designed to help policy implementers and programme planners assess the gender sensitivity of their HIV/AIDS and STD policies and programmes. First determine which areas pertain to your type of activities. Responses to the questions may then be answered *"yes"*, *"somewhat"* and *"no"*.

RESEARCHERS	YES	SOMEWHAT	NO
›› Do you explore the implications of gender inequality in relation to HIV/AIDS and STDs?	☐	☐	☐
›› Does your research focus on issues of special relevance to women and men:			
– Women controlling their risk	☐	☐	☐
– Women's scope for decision-making in different situations	☐	☐	☐
– Women's right to control fertility	☐	☐	☐
– Factors motivating men to share decision-making regarding fertility control	☐	☐	☐
– HIV transmission through breast-feeding	☐	☐	☐
– Female-controlled prevention methods	☐	☐	☐
– Factors motivating women and men to discuss mutual responsibility in relation to prevention	☐	☐	☐
– Factors facilitating women's and/or men's ability to undertake prevention	☐	☐	☐
– Women's and/or men's access to health services that address their specific concerns (including STD treatment)	☐	☐	☐
– Rape and violence	☐	☐	☐
– Sex work	☐	☐	☐
– Sexual practices facilitating HIV transmission	☐	☐	☐
– Female circumcision in relation to HIV/STDs	☐	☐	☐
– Female care roles and their impact on production and education	☐	☐	☐

	YES	SOMEWHAT	NO
– Factors motivating men to participate in domestic tasks and care	☐	☐	☐
– Inheritance rights	☐	☐	☐
Do you explore which information channels are most appropriate for different age and gender groups?	☐	☐	☐
Do you use these channels to communicate research findings and other information?	☐	☐	☐
Have you researched barriers to women's participation in programme activities?	☐	☐	☐

POLICY-MAKERS, PROGRAMME DEVELOPERS AND IMPLEMENTERS

Are all programme implementers able to address gender issues?	☐	☐	☐
Are women's organizations involved in policy and programme development and decision-making processes?	☐	☐	☐
Do women and men share programme goals?	☐	☐	☐
Do your interventions combat violence against women and girls (active policy goals, educational programmes, legislation)?	☐	☐	☐
Do your programmes consider differences in gender roles, access to resources and decision-making that affect women's and men's abilities to protect themselves?	☐	☐	☐
Do your programmes consider differences in male and female life experiences?	☐	☐	☐
Do your programmes differentiate between male and female health needs throughout the life cycle?	☐	☐	☐
Do your programmes call for gender-based sexual health education in school curricula?	☐	☐	☐
Do your programmes encourage couples, parents and/or children to discuss sexual health?	☐	☐	☐
Do your programmes address the need to motivate men to inform their wives if they are HIV-positive?	☐	☐	☐
Do your interventions aim to develop and strengthen men's concern and caring for their families?	☐	☐	☐
Do your education and communication programmes encourage men to share domestic responsibilities and tasks?	☐	☐	☐
Do your programmes encourage social welfare agencies, NGOs, employers, etc. to provide or make allowances for child and patient care?	☐	☐	☐

PROGRAMME ACTIVITIES

Do you organize activities at locations and times convenient to both women and men?	☐	☐	☐
Do you provide child-care services during activities and meetings?	☐	☐	☐
Do you create situations in which women and/or men can talk freely about their opinions, feelings and needs?	☐	☐	☐
Do you try to ensure that men and women hear and respond to one another's concerns and needs in a constructive manner?	☐	☐	☐

PROMOTING SAFER SEX	YES	SOMEWHAT	NO
Do your programmes:			
challenge double standards between men and women regarding a) teenage sexuality, b) casual sex, and c) sex outside marriage?	☐	☐	☐
address difficulties in condom use from women's and men's perspectives?	☐	☐	☐
teach both women and men how to use condoms?	☐	☐	☐
promote easy access to condoms for women and men?	☐	☐	☐
enhance women's and men's skills in negotiating safer sex?	☐	☐	☐
enhance women's self-confidence?	☐	☐	☐
address sexual abuse?	☐	☐	☐
promote attitudes to relationships that meet women's and men's sexual needs?	☐	☐	☐

PROVIDING HEALTH AND CARE SERVICES			
Do your programmes:			
ensure equal access by men and women, particularly for STD treatment?	☐	☐	☐
make family planning services attractive and accessible to men?	☐	☐	☐
encourage men to take on greater care roles in the family?	☐	☐	☐
address inheritance laws and customs where these put women and children at a disadvantage?	☐	☐	☐
address the different financial problems affecting women and men?	☐	☐	☐
ensure that girls' care roles and lack of money do not exclude them from school?	☐	☐	☐
include men as volunteers in providing community and home care services?	☐	☐	☐

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The Royal Tropical Institute (KIT), Southern Africa AIDS Information Dissemination Service (SAFAIDS) and World Health Organization (WHO) would like to hear readers' opinions of *Facing the challenges of HIV/AIDS/STDs: a gender-based response*. Your comments and suggestions would greatly contribute to and become part of shared knowledge. They will be incorporated in possible future editions of this publication, as well as other materials using parts of it.

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These broad fields of endeavour encompass a wide variety of activities, such as developing systems of primary health care that reach the whole population of Member countries: promoting the health of mothers and children; combating malnutrition; controlling malaria and other communicable diseases including tuberculosis and leprosy; coordinating the global strategy for the prevention of AIDS; having achieved the eradication of smallpox, promoting mass immunization against a number of other preventable diseases; improving mental health; providing safe water supplies; and training health personnel of all categories.

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TUBERCULOSIS CONTROL IN HIGH-PREVALENCE COUNTRIES

15b

Petra Graf

15b.1 THE EXTENT OF THE PROBLEM

Tuberculosis has declined in industrialized countries during the past decades, but it still represents a major health problem in developing countries. There are two basic factors influencing the difference of tuberculosis control between high- and low-prevalence countries; the prevalence of tuberculosis infection and disease within the communities, and the different socio-economic conditions.

If we talk about tuberculosis control in high-prevalence countries, we can synonymously talk about tuberculosis control in developing countries. Only a few of the problems that make proper tuberculosis control in developing countries such an extraordinary challenge can be mentioned here: poor overall health status of the population in developing countries; poor economies; poor infrastructure; bad roads; heavy rainy seasons, which make vast areas inaccessible for months; remote areas, inaccessible by car; the problem of nomads, migrants and refugees, and civil war. This list is far from being comprehensive. Not all of these aspects are specific for developing countries alone, but one has to face these problems when planning health intervention strategies in developing countries.

Table 15b.1 shows clearly that the tuberculosis problem is mainly a problem of the developing world. Out of approximately 8 million new cases per year, only 5% occur in industrialized countries and out of approximately 3 million deaths reported in tuberculosis cases per year, only 1.5% occur in industrialized countries. In other words, 95% of the cases are to be found in developing countries and more than 98% of related deaths occur in developing countries[1].

Table 15b.1 The global toll of tuberculosis

Region	*No. infected (000)*	*New cases (000)*	*Deaths (000)*
Africa	171 000	1398	656
Americas	117 000	564	220
E Mediterranean	52 000	594	163
SE Asia	426 000	2480	932
W Pacific	574 000	2557	894
Industrialized countries	382 000	409	42
Total	1 722 000	8002	2907

Source: First Programme Report (1989–1990) and Future Plan (1991–1995), World Health Organization. Document WHO/TB/91.159.

The causative agent of tuberculosis in developing countries is mainly *Mycobacterium tuberculosis* complex (*M. tuberculosis* and *M. africanum*); in areas where cattle holding is common one may still find *M. bovis*, but all these are equally responsive to modern chemotherapy.

Table 15b.2 shows the current average

Clinical Tuberculosis. Edited by P.D.O. Davies. Published in 1994 by Chapman & Hall, London. ISBN 0 412 48630 X

Table 15b.2 Epidemiological pattern of tuberculosis

Country/areas	*Annual risk (%)*		
	Current level of ARI	*Declining trend of ARI*	*Availabi health re*
I Industrial countries	0.1–0.01	>10	Excell
II Middle-income countries in Latin America, W Asia	0.5–1.5	5–10	Good
III Middle-income countries E/SE Asia	1.0–2.5	<5	Good
IV Sub-Saharan Africa, Indian subcontinent	1.0–2.5	0–3	Poor

ARI, annual risk of infection.
Souce: First Programme Report (1989–1990) and Future Plan (1991–1995), World Health Organization, Do WHO/TB/91.159.

levels of annual risk of infection with the tubercle bacillus in various regions. The annual tuberculosis infection rate, or incidence of infection, can be derived from tuberculin-test results in a representative sample of non-BCG-vaccinated children. The annual risk of infection is an approximation of the annual incidence of infection in a population. High-prevalence countries are countries with an annual risk of infection of 1% or more.

In some middle-income countries (Table 15b.2, II), tuberculosis has declined. In other middle-income developing countries (Table 15b.2, III), the decline is slow and tuberculosis still remains a major public health problem. In the majority of low-income, developing countries (Table 15b.2, IV), almost no decline has been observed and the absolute number of cases is probably increasing[1].

So which population group in high-prevalence countries is the major source of infection? Some 1.3 million cases and 40 000 deaths per annum occur in children under 15 years. This group also represents 10–20% of new cases, but only a very small proportion of smear-positive cases[2]. In Tanzania, a high-prevalence developing country, which forms a particular focus for this chapter (see pp. 335–338), only 2.1% of all smear-positive cases are younger than 15 years[3]. Therefore children do not play a major role as a source of infection.

It is the adult smear-positive case (inde who spreads the disease within the comm Such a smear-positive case may arise endogenous reactivation of an existing tion, from exogenous infection, or reinfection.

In developing countries tuberculosis limited to certain high-risk groups, alth one may find more cases in the poorer munities and in HIV-seropositive pa (see also Chapter 12). In other word developing countries the greatest inci and mortality is concentrated in the eco cally most productive group of the po tion (15–59 years). More than 80% o tuberculosis toll in the developing world in this age group[1]. Moreover, with emergence of HIV epidemics, which also mainly the 15–59 year age group, on assume that the extent of the proble many developing countries, above all in Saharan Africa, is likely to increase i next decade.

What would happen in high-preva countries if no intervention methods applied? In the absence of chemothe 50% of cases would die within 5 years, would recover spontaneously and would remain sputum-positive and con to spread the disease[4]. Therefore ther medical and ethical obligation to adequate intervention measures in ord get tuberculosis under control.

15b.2 THE PRINCIPLES OF TUBERCULOSIS CONTROL

In principle there are four methods for prevention of tuberculosis:

- Improvement of socio-economic conditions.
- Chemoprophylaxis.
- Vaccination.
- Case-finding and treatment[5].

Improvement of socioeconomic conditions is the measure that has the most profound effect on reducing the disease load, as tuberculosis is intimately associated with poverty and deprivation[5]. The major part of the decrease in the incidence of the disease in developed countries occurred long before effective therapy and vaccinations were available[6]. Unfortunately for many countries, socioeconomic development is a very complex and long-term solution.

Chemoprophylaxis and vaccination (Chapter 14) are expected to protect the individual, but not to have an immediate impact on transmission[5]. BCG vaccination in children provides a certain degree of protection against serious forms of the disease, such as miliary tuberculosis and tuberculosis meningitis, therefore BCG vaccination should be included in the Expanded Programme on Immunization in developing countries (Chapter 14b, p. 297). Chemoprophylaxis for infected contacts, especially children, since they have a high risk of developing the disease, is recommended to protect these individuals.

A *quick* reduction in the risk of transmission can be achieved by giving effective treatment to all smear-positive cases found in the community in order to make them non-infectious, taking into account that a single smear-positive case infects approximately 10–14 people in a year[7]. Consequently, the principles for tuberculosis control in high-prevalence areas are:

- To cure the individual and, by doing so, restore their quality of life (work capacity: socio-economic position, individual health and welfare).
- To decrease the risk of tuberculosis infection in the community, preferably to an extent where tuberculosis will no longer present a public health problem. This will improve the economic and social conditions of the respective community as a whole.

One has to make sure that a sufficiently high proportion of those patients put on treatment do complete it. Therefore, in Tanzania the more specified policy in the National TB Leprosy Programme is to aim at a cure ratio of 85% of all smear-positive cases put on short-course chemotherapy, which is also the WHO policy[8], in order to cure the individual and to reduce transmission in the community.

15b.3 CASE-FINDING

A case of tuberculosis for control purposes in high-prevalence countries is defined as 'an individual, discharging TB bacilli, especially if the bacilli in the sputum smear can be seen by direct smear microscopy'.[9]

Bacteriologically unconfirmed cases, such as pulmonary tuberculosis (PTB) smear-negative cases and extra pulmonary cases should, of course, also be treated, but must be notified separately[9]. For field purposes pulmonary TB should be suspected when a patient presents with:

- Persistent cough for more than 3 weeks, usually productive (with sputum), sometimes bloodstained.
- Loss of body weight, night sweats, fever.
- Chest pain.

The symptoms of extrapulmonary TB depend on the organs involved (see Chapter 7) and the diagnosis is sometimes not easy to make due to limited facilities in developing countries.

The diagnosis of pulmonary tuberculosis is based on bacteriological examination of spu-

tum smears. Smear-positive cases are diagnosed by direct smear microscopy only [10,11].

The role of microscopy is crucial in developing countries.

- It is the diagnostic tool for smear-positive cases before starting treatment.
- It is also the essential tool for monitoring treatment in smear-positive cases after the end of the intensive phase of short- course chemotherapy, during the continuation phase and at the end of treatment.

Pulmonary smear-negative cases should preferably be diagnosed by chest radiography with the assessment of a competent medical officer.

Radiological diagnosis of tuberculosis is unreliable, because other lung diseases can imitate the picture of PTB. Smear-negative disease may present with an uncharacteristic radiographic pattern, especially when associated with HIV-infection[9]. The costs of radiographic examinations are high and therefore very often not affordable for all cases of tuberculosis in developing countries.

Of course radiographs can be helpful in clinical work, especially for diagnosis of tuberculosis in children (where sputum is frequently negative), in miliary tuberculosis, in pulmonary smear-negative and in extrapulmonary tuberculosis.

The tuberculin test has a limited value in clinical work, especially in high-prevalence countries like Tanzania, where approximately 50% of the adult population is infected with the tubercle bacillus. But in children, the presence of a history of contact, together with a positive tuberculin test, is likely to reflect recent infection and therefore a high risk of developing disease[12,16].

Case-finding in high-prevalence countries' control programmes is in principle passive, which means that patients with symptoms present themselves to health facilities and are then examined. The promotion of awareness in the community and within medical staff may increase the yield of new tube cases. The only exception to passiv finding is the active tracing of conta smear-positive index case, such as ho contacts, especially children[12].

15b.4 TREATMENT

When cases are identified as tuber cases they should be handled with ad and effective treatment. In industr countries costs do not play a major deciding which treatment regimen to c In developing countries limited res force health officials very often to affordable treatment, which may not a be optimal treatment.

Short-course chemotherapy, preferab all smear-positive cases, containing at three effective drugs in the intensive and preferably two different drugs i follow-up phase, in order to prevent r ance, should be the treatment of choice well-structured programme.

'Short course' means that the duratio treatment should be 8 months or less in c to maintain an acceptable level of compli on the part of the patient (Chapter 8). intensive phase should usually last months, a time period during which u 90% of the smear-positive cases turn sputum smear-negativity.

In poor resource countries the intermit application of rifampicin unsupervised in continuation phase has to be very caref considered. The risk that the drug, even combined tablet, may be diverted and s unsupervised is high.

In Tanzania, fortunately levels of resista to antituberculosis drugs are low (see Ta 15b.3). There are several reasons for th Firstly, Tanzania is poor. Therefore, for cades antituberculosis drugs were only ava able through the National Programm they were not sold on the private mark Secondly, the drugs given through t National Tuberculosis Programme we

Table 15b.3 Drug resistance pattern in Tanzania for new smear-positive cases (1991)

Drug	*% resistance*
H	8
R	3
S	<1
E	3
HR	<1
HRS	0
HRSE	1
HS	1
HE	0
RS/RE/SE	0

H, isoniazid; R, rifampicin; S, streptomycin; E, ethambutol.

strictly supervised, daily in the initial phase of 2 months, monthly in the continuation phase of 6 months. Since almost 90% of the smear-positive cases converted to smear-negative after the intensive phase (month 2 or 3 of treatment), the chance of developing resistance was very low.

Nowadays antituberculosis drugs are available on the private market and are imported by voluntary agencies outside the National Programme as well. The partial loss of control over the distribution of these drugs will, in the future, probably make effective treatment more difficult in Tanzania as resistance is likely to emerge.

It is desirable that in the future even more effective drug combinations will be available, with a shorter duration of treatment. This would enable control programmes to cure patients in a shorter time period. Therefore it would be possible to cope better with the increasing case load in many places and eventually to overcome the tuberculosis problem more rapidly.

PTB smear-negative cases in Tanzania, as in many other African countries, are treated differently from smear-positive cases. Currently they still receive a 12-month SThH regimen (2SThH/10ThH), but hopefully this regimen can be changed soon. This is because of limited funds and lack of facilities for proper supervision for a rifampicin-containing component.

In the rural areas of Tanzania, and in many other developing countries, smear-positive patients have to be hospitalized for the intensive 2-month phase, not because they are so sick, but simply because there is no other way to ensure regular daily drug intake in areas where a patient has to walk 20 or 30 km to get to health care.

Table 15b.4 Short-course chemotherapy (SCC) regimen currently used within the NTLP, Tanzania

	Initial phase (2/12)	*Continuation phase (6/12)*
SCC for sputum smear +ves	S H R Z	Th H or E H
Non-rifampicin regimen for sputum smear −ves	S Th H	Th H or E H

S, streptomycin; H, isoniazid; R, rifampicin; Z, pyrazinamide; Th, thiacetazone; E, ethambutol.

Table 15b.4 shows the treatment regimen currently used in the National Tuberculosis and Leprosy Programme in Tanzania. This regimen is about to be changed. In the wake of the HIV endemic the programme will gradually abandon streptomycin injections, because of the risk of transmitting other infections to the tuberculosis patients, such as hepatitis or HIV[13]. Basic hygiene cannot always be guaranteed in countries where only limited resources are available, means for sterilization sometimes are poor and safe disposal of used needles is not always guaranteed.

Another argument for stopping injection in tuberculosis patients is to reduce the workload of an already overstrained staff by replacing time-consuming and work-

Table 15b.5 Cost of essential antituberculosis drugs[a]

Drugs	*Dosage/form*	*Packaging (no. per box)*	*Price (S*
Isoniazid	Tablets 100 mg	1000	3.
	300 mg	1000	11.
Rifampicin	Tablets 150 mg	100	4.
	(or capsules) 300 mg	100	9.
Pyrazinamide	Tablets 500 mg	100	4.
Isoniazid + rifampicin	Tablets 100 + 150 mg	100	5.
	150 + 300 mg	100	10.
Isoniazid + rifampicin + pyrazinamide	Tablets 50 + 120 + 300 mg	1000	115
Isoniazid + thiacetazone	Tablets 100 + 50 mg	1000	5.
	300 + 150 mg	1000	11.
Streptomycin (sulphate)	Ampoules (powder) 1 g	50	13.
Water for injection	Ampoules 5 ml	50	1.6
Ethambutol	Tablets 400 mg	500	11.9

Source: Chaulet *et al.* (1992), *Review of the International Children's Centre*, No. 196–7.
[a] Based on the UNICEF 1991 price list.
[b] The FOB price (free on board) of orders through UNICEF may be calculated by adding 4–6% to the price above.
[c] This is a special price for international organizations aiding National Tuberculosis Programmes. It includes the price and the cost of air transportation.

intensive injections by tablets[3]. Moreover, the programme is looking for additional long-term financial support in order to be able to use other, unfortunately more expensive, drugs instead of the cheap thiacetazone in the follow-up phase. This is to avoid the serious adverse effects such as Stevens–Johnson syndrome, which thiacetazone causes in HIV-positive tuberculosis patients (Chapter 12b)[14]. The same is planned for PTB smear-negative patients, at least for the known HIV-positive patients.

Since costs are always a key factor in health-intervention strategies, Table 15b.5 gives an overview of the present costs of TB drugs used in control programmes in high-prevalence countries.

As a rule-of-thumb one can keep in mind that one short-course chemotherapy treatment with 2 months' SHRZ and 6 months' ThH costs approximately 40 US$ (at 1991 prices). Other costs such as expenses for admission and staff salaries are not included in that figure.

15b.5 OTHER ASPECTS OF TUBERCULOSIS CONTROL

15b.5.1 MONITORING AND EVALUATION

A proper monitoring and evaluation system based on a meticulous recording and reporting system is of utmost importance in order to assess the effectiveness of both the treatment given and the particular programme and staff's performance.

The Tanzanian recording and reporting system developed by the International Union Against Tuberculosis and Lung Disease under the guidance of Dr K. Styblo is now serving as a model for many National Tuberculosis Programmes. The reporting system is based mainly on two reports, which are compiled at district level, for each respective district four times a year. They are the district quarterly report on case-finding and the district quarterly report on treatment results in smear-positive patients. The basic information made available is drawn from the **district register**, which, being an individual case register, contains all relevant pati

information on the cases enrolled for treatment:

- Name
- Home address, treatment unit
- Sex
- Age
- Disease classification (PTB-positive, PTB-negative, EP)
- Category (new pulmonary disease, relapse, transferred in, treatment after default, others – e.g. failures)

The district register also contains all relevant information on outcome of treatment:

- Smear results (at 0, 2, 5 and 8 months for an 8-month short-course regimen).
- Cured (confirmed by sputum smear microscopy).
- Treatment completed (last available smear negative, but no final smear result obtained).
- Died (from any cause whatsoever).
- Bacteriological positive (failure).
- Defaulted (out of control).
- Transferred out (from one region to another while being on treatment).

The district register contains all information needed to compile the two essential types of reports.

For epidemiological purposes the **quarterly reports on case-finding** are used (Fig. 15b.1) and compiled at central level for all districts. These reports enable information on trends in disease to be obtained (e.g. increased overall case load, newly detected smear-positive cases) but only as an indication of the incidence of disease, as not all cases will be detected. Such data are useful for planning staff needs, drug supplies and so on.

Trends in relation to a change in age or sex distribution or changes in sputum smear-positivity results can also be observed by data recording on these forms. Fig. 15b.2 illustrates the shift to the younger age groups in the National Tuberculosis Programme in Tanzania in the wake of the HIV endemic.

The other source of information is the **quarterly report on results of treatment**, also compiled at district level. This report is a cohort report. The cohort is the number of patients enrolled in a respective quarter, observed for the whole treatment period (8 months) for outcome of treatment (Fig. 15b.3).

This report, compiled at central level, enables programme managers to evaluate by cohort analysis – among many other subjects – the effectiveness of the programme as such, of the treatment applied and of the staff's performance.

15b.5.2 HEALTH EDUCATION

Health education of the individual patient is an essential tool to improve compliance. It has to be explained how the patient can avoid spreading the disease, how to identify other persons with symptoms in the household, why drugs must be taken regularly and why all of the drugs given must be taken until treatment is completed.

Health education of the community, at village level or through mass media at national level, has to explain what tuberculosis is, what the symptoms of the disease are, how it is spread, how it can be cured and that it is indeed curable.

Another important element of a good tuberculosis-control programme is continuous **systematic supervision** at all levels, from central (government) level down to the dispensary. All aspects of the programme have to be supervised, such as proper diagnosis, which means also supervision of staff, including that of the microscopy centres, and quality control. Supervision of proper case-holding, including individual patient care and overall treatment compliance, has to be assured throughout the year.

Supervision of recording and reporting at all levels is crucial, as well as supervision of managerial and administrative aspects, such as drug supplies and proper use of funds.

Ministry of Health
National Tuberculosis/Leprosy Programme

REPORT ON THE RESULTS OF TREATMENT OF SMEAR-POSITIVE PULMONARY TUBERCULOSIS PATIENTS REGISTERED 15-18 MONTHS EARLIER

Name of district : _____ District no : _____ Name of DTLC : _____	Patients registered during ☐ quarter of 19__	Date of completion of this form : _____ 19 _____ Signature :

Total No of smear-positive patients registered during the above quarter			Regimen	(1) Cured (smear-negative)	(2) Treatment completed (no smear-results)	(3) Died	(4) Failure (smear-positive)	(5) Defaulted	(6) Transferred to another district	Total number evaluated (sum of columns 1 to 6)
M	F	T*								
			1. New Cases							
			1.1 short-course	:						
			1.2 standard	:						
			1.3 Total	:						
			2. Retreatment							
			2.1 relapses	:						
			2.2 others (failure cases)	:						
			2.3 Total	:						

* Of those, _____ (number) were excluded from evaluation of chemotherapy for the following reasons : _____

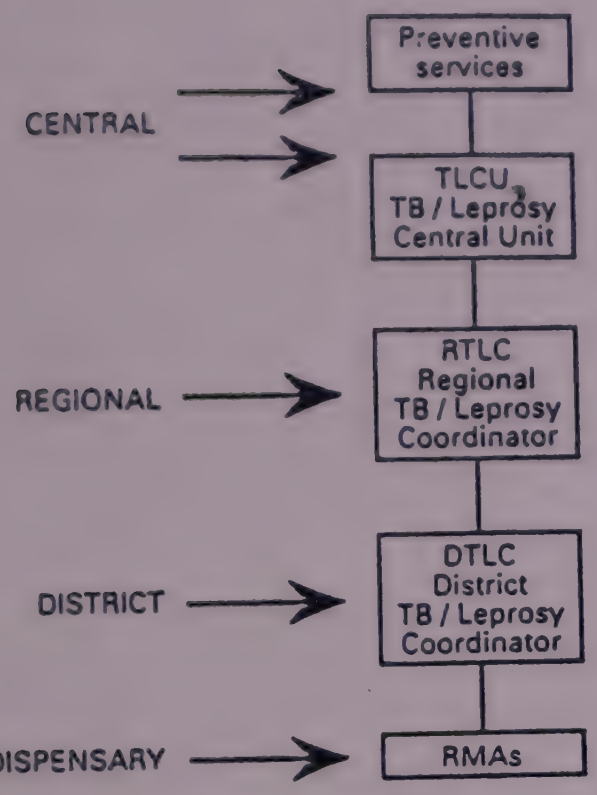

Fig. 15b.4 The structure of the National Tuberculosis and Leprosy Programme in Tanzania (RMA = Rural Medical Assistant).

Later, according to the resources available, the programme can be expanded gradually.

From the experience in Tanzania it is known that other areas, having heard of success in a region where the programme is already functioning fully, are ready to join the activities of a National Tuberculosis Programme.

15b.7 COST-EFFECTIVENESS OF TUBERCULOSIS WORK IN HIGH-PREVALENCE COUNTRIES

The greatest burden of tuberculosis incidence and mortality is concentrated in adults (age 15–59 years). These are the parents, workers and leaders of society. Therefore it is very important to make government officials, and donors to such programmes, aware that establishing a tuberculosis control programme means that they are supporting one of the most cost-effective health interventions available[16]. Systematic tuberculosis chemotherapy (and BCG vaccination) in countries with a high risk of infection are some of the most cost-effective health interventions available.

An analysis of the National Programme in Tanzania has shown that to treat smear-positive tuberculosis cases costs less than US$230 per death averted. Cost per discounted year of life saved is 1–2 US$ [16]. Cost-effectiveness for HIV-positive patients with smear-positive tuberculosis depends on the survival time of patients after treatment and the indirect benefits of treatment.

In terms of direct benefits, treating HIV-positive patients is much more expensive than treating HIV-seronegative patients. However, HIV-positive, smear-positive patients will also transmit the disease. If HIV-positive, smear-positive patients transmit almost as much tuberculosis as HIV-negative patients, then short-course chemotherapy should also be cost-effective[16]. It is an ethical obligation to treat all tuberculosis patients regardless of their HIV status.

15b.8 THE TANZANIA EXPERIENCE

Tanzania, an East African country situated bordering the Indian Ocean between Kenya in the north and Malawi/Mozambique in the south, has very limited resources (Table 15b.6). Nevertheless, Tanzania has a well-

Table 15b.6 Basic data on Tanzania

Population	~24 million
Area	881 289 km^2
Proportion of rural population	82%
GNP	~200 US$
Birth rate (per 1000 population)	46 (1988)
Death rate (per 1000 population)	15 (1988)
Infant mortality (per 1000 live births)	116 (1988)
Life expectancy	~50 years

Table 15b.7 Synopsis: Tuberculosis 1983–1991, mainland Tanzania

	1983	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1*
Newly detected cases	11 782	12 089	14 089	15 453	16 920	18 234	19 262	22 249	25
Smear +ve PTB	6651	7523	8207	8561	9279	9918	10 479	11 396	11
Case detection rate per 100 000	34.1	37.3	39.6	40.2	42.3	44.0	44.0	47.8	4
Cohort reported cure rate (%) in SCC	43%	49%	61%	67%	72%	74%	77%	79%	Not
AFB +ve patients put on SCC	799	2745	4936	5919	7171	8155	9320	9742	–
% of all AFB +ve	12%	36%	60%	69%	77%	82%	87%	86%	–

PTB, pulmonary tuberculosis; SCC, short-course chemotherapy; AFB, acid-fast bacilli.

functioning Tuberculosis National Programme, established in 1977 as the 'National Tuberculosis and Leprosy Programme' (NTLP), Tanzania – the first combined Leprosy–Tuberculosis programme of its kind in the world. It has functioned successfully, without major breakdowns, for almost 15 years, and one may wonder as to what is the secret of its success.

Firstly, the country, despite its poor resources, has had political stability for many years. It also has a well-established health infrastructure from central to district, and down to dispensary level, although sometimes the well-designed structures cannot be filled with active workers due to limited availability of resources (Fig. 15b.4). The NTLP is fully integrated in this existing health system, no extra structures have been created. Only specialized staff have been made available within the existing system.

These two factors also contributed largely to the success of other programmes, for example in Malawi[17].

The typical problems of developing countries remain: bad roads, heavy rainy seasons, poor communication systems. These are, among others, the daily problems that have had to be faced while running the National Programme. From the beginning, however, the programme had the full
mittment and reliable support of the g
ment. Now almost all staff are Tanza
salaries for them being paid by the g
ment. A continuous, uninterrupted
supply, including supply of a reas
stock, by the overseas donors has guara
that patients searching for treatment rea
get treatment, which unfortunately is n
rule in many other existing programme

Reliable means of transport (cars, m
bikes), are one of the biggest cost fa
besides drugs, and have been made ava
by donors.

The programme has served as a mod
many other countries. The unique reco
and reporting system designed by IUA
under the guidance of Dr K. Styblo[18,
used nowadays – with slight variations o
in many National Tuberculosis Progra
and represents the WHO recommen
recording and reporting system.

The combination of programmes for
diseases, tuberculosis and leprosy, has
contributed to the success, the donors
both sides assisting each other. Morec
combining forces has contributed to ma
the programmes more cost-effective
member of staff specialized for two disea
one vehicle serving several purposes etc

Table 15b.8 Treatment results: tuberculosis smear positives, NTLP first half 1990

Cured	79%
Treatment completed	3%
Died	8%
Failure (remained +ve)	1%
Out of control	4%
Transferred out	5%
Total	100%

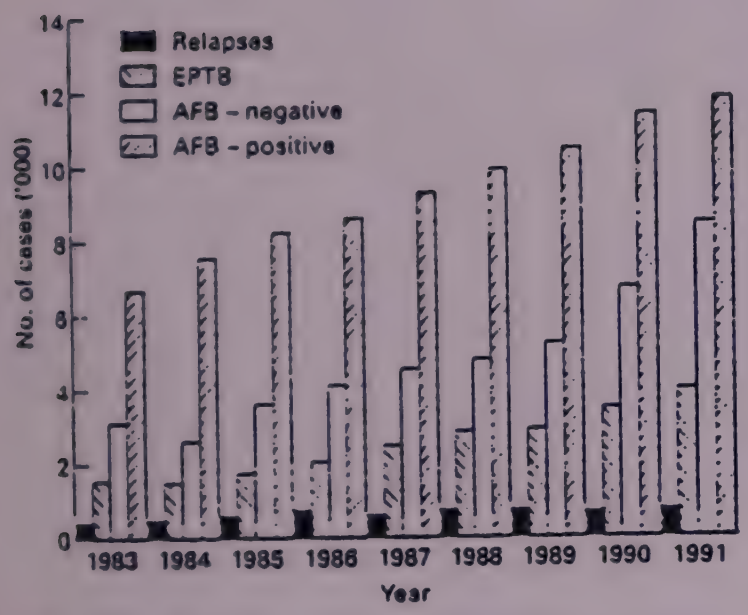

Fig. 15b.5 New cases of tuberculosis, all forms, reported in the National Programme in Tanzania, 1983–1991. (EPTB denotes extrapulmonary disease; AFB = acid-fast bacilli.)

The results are displayed in Tables 15b.7 and 15b.8 and in Fig. 15b.5.

Why did the NTLP Tanzania not reach the goal of an 85% cure rate? Firstly, 8% of all patients died during treatment, not all of tuberculosis, but many also of other causes. A considerable proportion died from AIDS, after converting to sputum smear-negativity.

A 1% failure rate of cases who could not be cured by treatment is acceptable. Another 5% were transferred to another region, again a proportion that cannot be influenced by the programme as such. Another 4% defaulted (out of control), which is a fairly low proportion, even in developed countries. Three per cent of the patients completed treatment without having cure confirmed by a final smear, either because they could not produce sputum or because they did not attend for a final smear examination. This is also an acceptable proportion.

Therefore only 79% of all smear-positive cases were cured. If one assumes that most of the patients in the 'treatment completed' group are cured as well, and if one accepts that those who died are no longer a source of infection, 90% of the positive patients enrolled for treatment are eradicated as a source of infection. Also if up to 50% of those 'transferred out' and 'out of control' are cured, it can be concluded that the 1991 results for short-course chemotherapy in smear-positive patients are very favourable.

Of course the programme also has problems and its quality varies from region to region depending on the motivation of the persons involved. Preliminary results of an ongoing WHO study in Tanzania reveal that some 30–40% of our tuberculosis patients are HIV-positive. The current close association of the two endemics in Tanzania and other developing countries leaves many open questions. Although the response to chemotherapy in HIV/TB-positive patients is generally good, the management of the individual patients has to be adjusted to the new conditions (Chapter 12b).

Drugs that cause serious adverse effects in HIV/TB positive cases should be replaced by better tolerated drugs[20] in order to maintain the 'good reputation' of such programmes. Emphasis should be put on proper diagnosis. Overdiagnosis in HIV/TB-positive cases is common. Is a 'wasting child' a TB case, a malnourished child, or an HIV-infected one? These are questions that require certain skills on the part of the staff involved in tuberculosis diagnosis, to be answered. The proportion of deaths in tuberculosis patients will increase. The prognosis of cure of tuberculosis is good for TB in HIV-

positive patients, but poor with regard to other HIV-related diseases. In addition, the compliance of TB/HIV-positive cases may differ from the ordinary tuberculosis patients. There will be problems in handling confidentiality while registering patients. Counselling of known HIV-positive subjects may be a new burden for the tuberculosis programme. The list could be continued with subjects like chemoprophylaxis for HIV-positive patients and BCG in HIV-positive patients.

Overall costs for tuberculosis programmes may rise due to increased case load and probably more frequent need for hospitalization in HIV/TB patients, especially when they present with full-blown AIDS.

The biggest problem now is the increasing figures in tuberculosis case detection, which put a tremendous strain on the programme, especially in the urban areas, where patients from the rural areas search for help. The overall increase can be attributed partly to improved reporting and diagnosing, partly to the influx of immigrants from neighbouring countries, attracted by the quality of the programme, but definitely the HIV endemic in the country contributes most to the steady increase. HIV infection is the highest risk factor so far identified, which increases the risk of latent infection with tuberculosis progressing to an active form of disease by reducing the cell-mediated immunity[21,22].

Moreover, recent studies reveal that HIV-seropositive cases may be infected more quickly and more heavily, resulting in development of the disease sooner than in HIV-seronegative patients[23]. The only way to cope with this increased case load, which can be identified with workload, is to reduce the sources of infection. In turn, this means keeping the cure ratio high. This can be achieved by increasing the staff and space for the patients, especially in the overstrained urban areas, and by intensified health education activities. These activities should make people aware of the further existing possibility and necessity of cure for tuberculosis. In addition, treatment regimens have to be adjusted to the new conditions we are facing in the wake of the HIV pandemic. Lastly, a close co-operation with National Aids Programmes is desirable, since we are sharing a considerable proportion of patients.

The future will show whether measures presently available are sufficient to maintain the standard of the ongoing programmes or whether other, completely new intervention strategies have to be applied.

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3

MATERIAL ON HIV/AIDS

SENT BY

MEDICAL MISSION INSTITUTE

AIDS AND INTERNATIONAL HEALTH DEPARTMENT

SALVATORSTR. 22

D-97074 WÜRZBURG

GERMANY

CARING FOR PEOPLE WITH AIDS AT HOME

ISBN: 92-9139-003-8

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Dear Volunteer,

The International Federation of Red Cross and Red Crescent Societies in collaboration with the Norwegian Red Cross and NORAD has produced this Home Care Manual specifically for volunteers. We hope it will help you learn more about helping families of people with HIV/AIDS and motivate you to continue work with and in your community.

The Federation is dedicated and mandated to supporting and helping victims of disasters and to improving the situation of the most vulnerable. The HIV/AIDS pandemic is very much a disaster of our times. People that are touched by HIV and AIDS — both the families, friends and the individuals themselves — are vulnerable in economic and social terms and, as such, deserve the help of the International Red Cross and Red Crescent Movement.

One of the ways that we can give support to people is by giving them the necessary tools to meet their own needs. As a volunteer, you are in an ideal position to provide the members of your community with the knowledge they need to take care of people with HIV and AIDS at home.

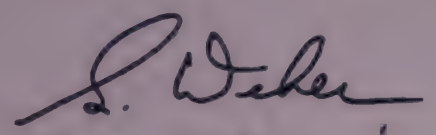
HIV and AIDS can be prevented through education. However, as of today, once a person has become infected with HIV, there is no known cure. A person with HIV needs your love, support and understanding. This manual is one way in which we can show our solidarity with the families, friends and people affected by HIV.

(continued)

Please take the time to read through this manual. The advice is simple and straightforward. It will make a difference.

Thank you for your work and dedication to the International Red Cross and Red Crescent Movement.

I would also like to take this opportunity to thank everyone involved in writing and producing this manual.



George Weber
Secretary General
International Federation of
Red Cross and Red Crescent Societies

November 1993

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PREFACE

The Norwegian Red Cross has been involved in the fight against HIV and AIDS since 1983. In 1985 we contacted sister National Societies in Africa to see how we could work together in this area.

For example, the Norwegian Red Cross has worked closely with a sister National Society in Africa, using its long experience in educating volunteers, to set up a project to teach the public about the AIDS pandemic.

Now volunteers teach families the basics of home care for the dying. This outreach is a good opportunity to teach the families about AIDS, malaria and tuberculosis as well. And the effect is manifold.

In the International Red Cross and Red Crescent Movement, we know individuals can make a difference to those who suffer. Knowledge is the cornerstone on which we want to build our solidarity. This handbook is simple, it is easy to adapt it to various local realities, and it can be added to at any time.

In the tradition of the Movement, we offer this to anyone who wants to help the dying to suffer less.

Sven Mollekleiv
Secretary General
The Norwegian Red Cross

PART ONE:

INTRODUCTION

Basic information on homecare and AIDS

People with AIDS need to be cared for at home for long periods of time. Volunteers can teach families how to provide simple home nursing care. When volunteers visit the person's home, they can also be counsellors, simply by listening to and encouraging the person and the family.

The objective of this guide is to enable volunteers to teach the family to provide nursing care to the person with AIDS or with any other chronic illness. In order to provide nursing care, the family must know how to:

- Provide good nutrition
- Help the person with hygiene and personal care
- Ease the person's pain, fever and discomfort
- Assist the person to relieve problems such as diarrhoea, sore mouth or throat, skin sores, or cough
- Ease the person's fear, anxiety or depression
- Describe how AIDS is and is not spread
- Deal with issues related to HIV transmission.

This guide contains a list of problems and symptoms the person with AIDS may have. After each problem is advice for the volunteer to teach the person who is ill and the family who provides care.

The advice in this guide is not a substitute for health care! The volunteer should encourage people with AIDS to seek health care. Both modern doctors and traditional healers

can be helpful. Some AIDS-related infections, such as tuberculosis, can be treated effectively with modern medicines. Many AIDS-related symptoms, such as rashes and fevers, can be relieved by traditional and modern medicines.

The role of the volunteer

The volunteer can play a very important role by visiting, teaching and encouraging families who are caring for a sick person. Families appreciate the time that volunteers spend with them. The volunteer:

- Visits the family at home and provides support
- Teaches the family how to provide nursing care
- Helps the family to seek other resources in the community such as health care
- Never talks about the person with AIDS or the family to other people in the community.

Some people who are infected with Human Immunodeficiency Virus (HIV) look healthy and well. Also, when a person with HIV becomes sick, the symptoms can look like the symptoms of many other illnesses. Therefore, people can have HIV but not know it. The volunteer does not need to know whether the person has AIDS to teach the family how to care for the person. The volunteer should teach all families how to practice good hygiene, including how to avoid touching blood. This will prevent any infection, including AIDS, from being spread while the sick person is being cared for at home.

Community resources

In addition to helping the family by teaching them these guidelines for care, the volunteer can help the family to use other resources that are available in the community.

The local health centre is one important example. Also, many organisations such as churches and women's societies may have programmes to provide food or clothing for the poor. The volunteer can also organise neighbours to help needy families, for example: by asking for donations of old clothes, blankets or food; by arranging a group of people to carry the sick person to the health centre; by encouraging neighbours to carry water or gather wood for the family.

How to take care of ourselves

The volunteer who visits families becomes involved in their lives. Visiting the family may take a lot of time. Often the family has problems, especially if they are poor. The volunteer may become attached to people in the family, and feels sad when the sick person becomes sicker or dies.

Volunteers should meet with other volunteers, in pairs or in a group, to discuss their feelings and to share ideas on how to solve problems. However, never discuss these matters with anyone except other volunteers or staff. Sometimes it is helpful for a group to be led by someone such as a nurse.

AIDS

AIDS is a disease caused by a virus called the Human Immunodeficiency Virus (HIV). The virus lives in human blood, semen and vaginal secretions. The AIDS virus is transmitted in the following ways:

- Through unprotected sexual intercourse (without a condom) with an infected person.

- From an infected mother to her unborn child. (There is one chance in four her baby will develop AIDS.)

- When blood from a person who has HIV gets into the bloodstream of another person. (This could be by transfusion with infected blood, or by using needles, syringes and razors contaminated with infected blood.)

HIV is not transmitted by living with a person with AIDS or caring for a person with AIDS.

Some symptoms of AIDS are:

- Severe weight loss for no apparent reason
- Chronic fever, chills and night sweats
- Chronic diarrhoea for more than a month
- Dry cough for more than a month
- Weakness and fatigue
- Skin problems.

Some of the infections and cancers that the sick person may have are:

- Herpes zoster
- Tuberculosis
- Thrush (candida) in the mouth, throat or genital area
- Kaposis sarcoma.

Children with AIDS may have the following symptoms:

- Slow growth
- Slow development (to suck, walk, talk)
- Multiple and frequent infections
- All the symptoms and infections. found in adults.

Stigma

There is often a stigma associated with having AIDS. Many people are afraid of catching AIDS just by being around people who have AIDS. Once the volunteer learns about AIDS, he or she knows that this is not possible. Other people think that people with AIDS are bad or immoral people. The volunteer also knows that this is not true. Besides, the volunteer wants to help people, not to judge them.

The volunteer can help reduce the stigma about AIDS by teaching people in the community the facts about AIDS. The

volunteer can also help by being friendly with people who are known to have AIDS.

Many families do not want others in the community to know the sick person has AIDS. Because of this, volunteers often offer to visit people in the community with ANY illness rather than only people with AIDS.

Confidentiality

A volunteer who visits sick people in their homes must be able to maintain confidentiality. This means that none of the information the volunteer learns about the sick person and the family, including the name of the illness, should be revealed to other people unless the sick person allows it. Conversations the volunteer has with the sick person and with the family should not be repeated to others.

Confidentiality applies within the sick person's home as well as elsewhere. The sick person should be the one to decide whether to tell other family members that he or she has AIDS. They will not catch AIDS from taking care of the sick person, even if they do not know he or she has AIDS.

Remember the ways someone could catch HIV from the sick person. If you think someone is being exposed to AIDS from the sick person in one of these ways, you can talk to the person with AIDS about it. But confidentiality means that you should not tell the other person that the sick person has AIDS.

Hygiene in the home

The person with AIDS can get infections more easily than healthy people. Proper hygiene in the home protects the sick person as well as the rest of the family.

What to teach the person and the family to do at home:

- *Always wash hands before cooking or eating.*
- *Always wash hands after defecating.*
- *Wash dishes in hot water with soap.*
- *Wash linens and clothes with soap and hot water.*
- *Cover the mouth when coughing, and then wash hands.*
- *Always spit into a container, not on the ground.*
- *Avoid touching blood.*
- *Always wash the hands after touching blood.*
- *Dispose of garbage in covered containers, or bury or burn it.*

HIV CAN be spread from one person to another in the following ways:

- By having unprotected sex (without a condom) with someone who has HIV
- From an infected mother to her unborn child
- When blood from a person who has HIV gets into the bloodstream of another person.

HIV CANNOT be spread by eating with, talking to, hugging, taking care of, or working with a person who has HIV or AIDS.

What to teach the person and the family:

- *Tell them how to prevent sexual transmission, including how to use condoms. (Contact your National AIDS Control Programme for further information.)*
- *Tell a woman with HIV that if she has a baby, it may develop AIDS. Tell her how she can prevent pregnancy, and if she wants, help her go to a family planning program. (Contact the family planning program in your community for more information about how to prevent pregnancy.)*
- *Tell them how to prevent transmission of infected blood.*
- *Avoid touching blood, or body fluids containing visible blood (such as bloody stool or vomit).*
- *Always wash hands after touching blood.*
- *For blood-stained linens and clothes: Rinse blood out with cold water without touching the blood. Then wash with soap and water and dry in the sun. Then wash your hands.*
- *For traditional practices in which skin is cut: Always take your own knife or razor for the traditional healer to use, or make sure the one he or she uses is boiled between uses on different people.*

PART TWO:

PROBLEMS THE SICK PERSON MAY HAVE

Nutrition

In many countries AIDS is called Slim because it causes severe weight loss. Often people are nauseated, vomit, aren't hungry, or have chronic diarrhoea. Eating or swallowing may be painful. Some people lose weight even though they eat.

What to teach the person and the family to do at home:

- *Eat small amounts often, including complete nutrition if possible: fruits, vegetables, grains and beans, and if possible, eggs, milk, meat or fish.*
- *Choose foods that the person likes.*

What to teach the family:

- *Keep the person away from cooking smells.*
- *Prepare small amounts of favourite food often.*
- *Watch for dehydration. (See treatment for dehydration under* Diarrhoea.)

Skin problems

Persons with AIDS often have chronic rashes (red, itching skin) or open sores on the skin.

What to teach the person and the family to do at home:

- *If the person has diarrhoea, wash the skin with warm soap and water after each bowel movement and keep the skin clean and dry.*
- *For open sores, wash with soap and water, keep the area dry, and apply gentian violet solution. Dressings can be made of cloth strips that have been washed and dried in the sun.*
- *For rashes, apply local remedies, oil or Calamine Lotion.*
- *Herpes zoster causes a large area of open sores on one side of the body, which can be very painful. For adults, take 2 aspirin or paracetamol every 4 hours. Local remedies may also be helpful. If the pain is very bad or the sores become infected, encourage the person to go to a health care facility for stronger pain medicine and for dressings and medicines for the open sores.*

What to teach the family to prevent bed sores when a person cannot get out of in bed:

- *Put the person on soft pillows or many layers of cloth.*
- *Move the person every 2 hours, from side to side.*
- *Gently rub skin that is dark, reddened, or irritated.*

Sore mouth and throat

AIDS can cause soreness in the mouth, white patches on the tongue, pain in the throat causing difficulty swallowing, and sores on the lips.

What to teach the person and family to do at home:

- *Rinse the mouth with warm water mixed with a pinch of salt.*
- *For white patches, suck a lemon if it is not too painful.*
- *Eat soft foods as able.*
- *Apply gentian violet solution to sores on the lips and mouth.*
- *Use any local remedies that are soothing.*

Pain

AIDS results in many kinds of chronic pain and discomfort.

What to teach the person and family to do at home:

- *For adults, take 2 aspirin or paracetamol tablets every 4 hours. (With aspirin, make sure that the stomach is not empty. Take small amounts of food first.)*
- *Use any local remedies that ease the pain.*
- *If lying in bed, change positions in bed frequently.*
- *For swelling, raise the legs or swollen body parts on pillows.*

What to teach the family:

- *Rub and gently massage sore muscles. Use oils.*
- *Talk with the person. Provide distraction to help the person forget the pain.*
- *Help the person to change positions and to raise the legs or swollen body parts.*

Tiredness, weakness

People with AIDS are often very tired and weak.

What to teach the person and family to do at home:

- *Rest as often as needed. Learn to accept help from others.*
- *Find ways to make activities easier. (For example, sit rather than stand to wash.)*

What to teach the family to do at home:

- *If needed, help the person with care such as washing, going to the toilet or latrine, getting in and out of bed, eating.*
- *If the person cannot get out of bed at all:*
  - > *Gently move the arms and legs several times a day.*
  - > *Turn him or her from one side, to the back, to the other side, every few hours.*
  - > *Put him or her on a pot every few hours, or more often if needed, to empty the bowels or bladder.*
  - > *Keep the skin clean and dry.*

Fevers

Fevers often come and go with AIDS.

What to teach the person and family to do at home:

- *Wash the body in cool water or wipe the skin with wet cloths.*
- *For adults, take 2 tablets of aspirin or paracetamol every 4 hours. (With aspirin, take small amounts of food first.)*
- *Drink more than usual: water, tea, broth or juice.*
- *Use any local remedies that reduce the fever.*
- *Fevers may also be caused by infections such as malaria and tuberculosis that can be treated effectively by modern medicine. Encourage the person to go to a health care facility if a new or especially high fever develops.*

What to teach the family:

- *Offer water and other drinks frequently.*
- *If the person is weak, help him or her to turn from side to side in bed, or to sit up and move about.*
- *Help keep the person clean and dry.*
- *Watch for dehydration. (See treatment for dehydration under* Diarrhoea.*)*

Chronic diarrhoea

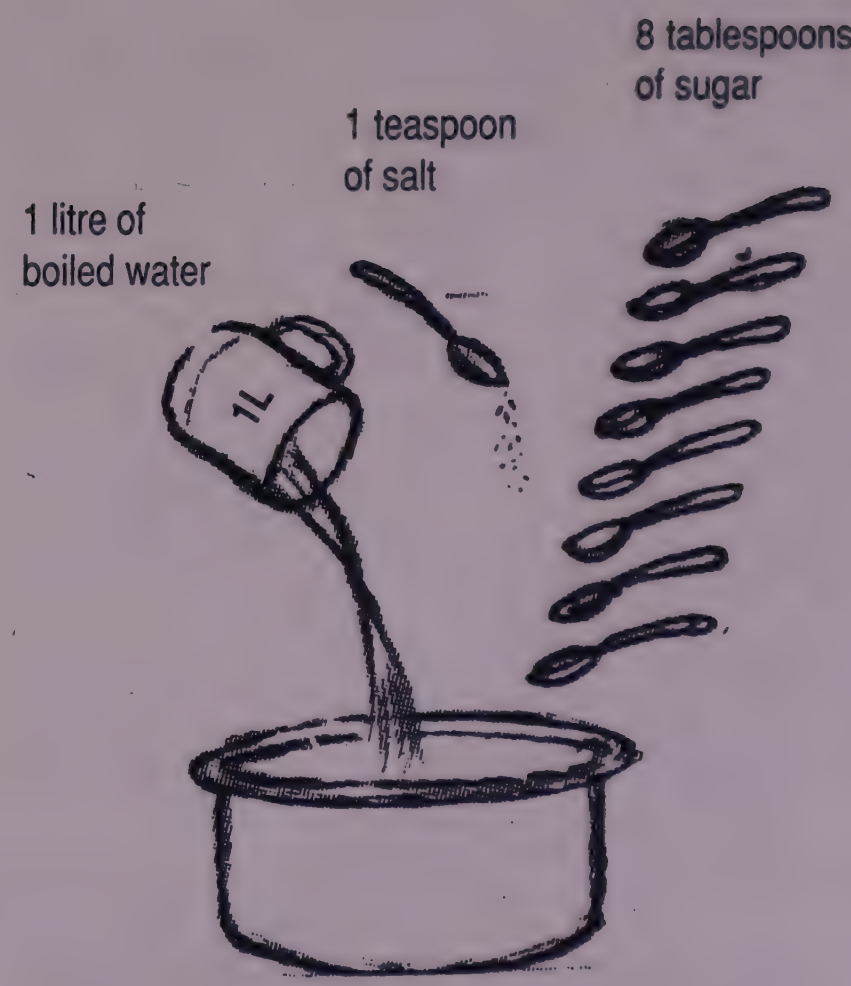
People with AIDS may have diarrhoea that does not go away.

What to teach the person and family to do at home:

- *Drink much more than usual: lots of water, tea, broth, or juice.*
- *Continue eating solid foods, including porridge and fruit such as bananas.*
- *Wash and dry the skin around anus and buttocks after every bowel movement.*

What to teach the family:

- *Encourage and serve lots of water, soup and juice frequently.*
- *Watch for signs of dehydration: the tongue is dry, the eyes are sunken, and skin goes back slowly when pinched. If the person is dehydrated, give Oral Rehydration Salts or a homemade sugar, salt solution (sss) (1 litre of boiled water mixed with 8 heaped tablespoons of sugar and one teaspoon of salt) as well as other drinks. If the person cannot drink, and dehydration becomes worse, encourage the family to quickly take the person to the nearest health facility.*



Cough, difficulty in breathing

People with AIDS often have infections in the lungs, chronic cough, or difficulty in breathing.

What to teach the person and family to do at home:

- *For adults, take 2 tablets of aspirin or paracetamol every 4 hours. (With aspirin, take small amounts of food first.)*
- *Drink lots of fluids, especially if there is fever.*
- *Move about and turn in bed frequently.*
- *Sit up when possible.*
- *Cover the mouth when coughing. Spit into something that can be burned such as a piece of paper, leaf or a paper box.*
- *Use any local remedies that are soothing.*
- *Some lung infections that people with AIDS can get, such as pneumonia and tuberculosis (TB), can be treated effectively with modern medicine. TB is contagious to others if it is not treated. Encourage the person to go to a health care facility for any new cough or difficulty breathing, especially if there is chest pain, bloody sputum, or a new fever.*

What to teach the family:

- *Elevate head and upper body on pillows or raise the head of the bed on blocks to assist breathing.*
- *Sit with the person. Difficulty in breathing can be very frightening.*

Confusion

People with AIDS may become confused and forgetful, or they may try to walk when too weak, or they may have difficulty seeing.

What to teach the family to do at home:

- *Move loose or dangerous objects out of the way.*
- *Help the person when she or he walks.*
- *Try not to leave the person alone and unattended.*
- *Keep medicines out of the person's way if the person is forgetful and might take them incorrectly.*

Fear, anxiety or depression

People with chronic illness and their families may have many different feelings, such as anger, fear, and sadness. Volunteers are often afraid these feelings will become too strong. However, these feelings are normal reactions to a crisis such as suffering with AIDS.

What to teach the person to do at home:

- *Talk to someone.*

What to teach the family:

- *Listen to the person who is sick.*
- *Let the person know that their feelings are normal.*
- *If they need or want professional help, help them to get it if possible.*
- *Talk to someone.*
- *Get support from a helping organization in the community. Many health workers and religious and spiritual organizations can counsel people with AIDS and their families. If a person needs help and will not accept it, or is so angry that he or she may hurt himself or another person, it is a good idea for the family to talk to someone in a helping organization.*

Care of the person who is dying

Eventually, the person with AIDS is no longer chronically ill. He or she is dying. When this change occurs, it is sometimes hard for the person and for the family to accept. However, a different kind of care is needed now. This care can be provided either in hospital or at home. In both places, the family is very important when a person is dying.

What to teach the person and the family:

Keep the person as comfortable as possible:

- *For pain, provide pain medication at regular times. (See the section on* Pain.*)*
- *Help the person relax: for example, give back rubs, body massages, serve tea.*
- *Keep the person clean and dry. (See the section on* Skin Problems*).*

Help the person to be as independent as possible:

- *Accept his or her decisions such as refusing to eat or to get up.*
- *Respect his or her requests such as having certain visitors.*
- *Allow the person to grieve for the losses he or she is experiencing.*
- *Let the person talk about how he or she feels.*
- *Accept the person's feelings: for example, anger or sorrow.*

Help the person and the family prepare for death.

- *Some people are afraid of what dying will be like. Sometimes, fear can be lessened by knowing what it will be like. If the person asks, describe things that might happen, such as difficulty breathing, and going in and out of consciousness.*
- *Some people are worried about what will happen after they die. This worry can be lessened by helping the person prepare for the future. For example, find relatives who could eventually care for children or help the person plan how the funeral will be paid for.*
- *Some people feel that it is not good to talk about the fact that a person is going to die. You can still provide comfort by continuing to visit during this time.*
- *After a person has died, help the family to grieve by listening to them talk. Spiritual leaders can often provide important support during this time.*

4

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MALE GENDER ROLES AND SEXUALITY: IMPLICATIONS FOR WOMEN'S AIDS RISK AND PREVENTION

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Abstract—The focus of prevention of the heterosexual AIDS epidemic in the U.S. has been on women. The role of men in sexual decision making has not been emphasized in AIDS prevention approaches. As a result, the heterosexual epidemic for women continues unabated because of the lack of attention to the behavior of male sex partners. This article describes a profile of male sex partners and emphasizes gender roles and sexuality. Prevention efforts that focus singly on women have been misguided and have actually served to undermine women by making them responsible for HIV risk reduction. Prevention of AIDS among heterosexuals will require an examination of how traditional gender role socialization runs counter to safer sex practices. Control of the epidemic will require a focus on men as individuals responsible for their own health and the health of women.

Key words—AIDS, heterosexual, males, men, masculinity, gender roles, sexuality

INTRODUCTION

The first cases of AIDS in the United States were reported among gay men in 1981 [1]. Although men who have sex with men continue to make up the largest percentage of cases, the profile of the U.S. epidemic has changed and now includes an increasing number of cases, especially female, resulting from heterosexual contact.

The following year after AIDS was identified among gay men, it appeared in four more groups: injection drug users (IDUs) [2]; recipients of blood or blood products [3, 4]; infants born to mothers at risk [5]; and heterosexual partners of persons with AIDS or HIV infection [6]. From the onset, the injection drug category was closely tied to the heterosexual and perinatal categories. Transmission resulting from sharing drug injection equipment has been the principal link to other adult populations through heterosexual intercourse and to infants through perinatal transmission. In recent years, cases among IDUs have grown, with a concomitant increase in cases from heterosexual contact with IDUs, and from perinatal transmission to infants. Because of the rapid growth in cases among IDUs, heterosexual transmission is currently the fastest growing route of transmission [7]. Female cases currently comprise 12% of the total adult and adolescent AIDS cases in the U.S. [7]. Today cases among women are growing at a faster rate than cases among men [7]. One half of the new infections in 1993 have been among women [7] and by the year 2000, the total number of female cases is expected to equal male cases [8].

Although various prevention efforts have been made to educate women about their risk for HIV infection, the actual success of many of these efforts will depend on behavioral change of male sex partners. Women may be informed about the danger of unprotected sex, but may not be in a position to use condoms because of refusal on the part of their male partners.

Health promotion approaches focus on individual change. These approaches are based on the idea that individuals will respond to health information given to them, and on the basis of that information, will make decisions about their health [9]. Implicit in health promotion approaches is the assumption that individuals have personal control over their health. Health promotion approaches aimed at reducing risk for HIV infection have not been especially relevant to many women. These programs have failed to treat sexuality in a social context and to recognize that, despite concern about their risk, women may be limited in their ability to act on information provided to them [10].

A FOCUS ON WOMEN

For several years now, considerable attention has been placed on the risks that women face from heterosexual contact [11–18]. In response, various prevention strategies aimed at reducing women's risk have been developed. These prevention strategies, however, often treat women's risk behavior separate from the behavior of men, without acknowledging gender power differences [10, 17]. The focus of prevention is often on the individual, without attention to the sociocultural context in which individuals interact. For example, prevention approaches may ignore the reality that women do not always have control over

the behavior of their male partners. Moreover, women are not always aware of the past or present risk behavior of their partners. Thus they do not perceive themselves at risk. Even so, prevention efforts are often focused on changing the behavior of women, rather than men.

The author maintains that this focus has been misguided, and ironically has actually undermined women's ability to practice preventive health behavior. By focusing singly on women, it has ignored the role of men in sexual decision making and has reinforced the belief that women are responsible for safer sex. Public health's well-intentioned effort to warn women about their risk has simultaneously taken pressure off of men to practice safe behavior. While the attention to women's risk is important, it has perpetuated traditional beliefs about gender roles and thus has served to free men from taking responsibility for their own health and that of their female partners. The focus of prevention efforts on women is myopic in that women who represent one-half of a partnership are getting information but men who represent the other half are not.

AIDS prevention strategies targeting women have often emphasized the importance of communication and negotiation with male partners regarding safer sex practice with the goal of getting men to change their behavior by relying on the negotiation skills of women. This emphasis is misplaced because it works through women to get men to change their behavior and relies too heavily on individual control without acknowledgement of socio-cultural constraints. The author maintains that men should be targeted directly as a group of male sex partners, rather than through women.

In practice, fewer prevention efforts have been directed to males as sex partners [18]. There also has been a lack of attention to the way in which gender socialization contributes to perceptions about sexual identity. These perceptions have not been fully examined for their relevance to HIV risk reduction strategies. This article will show how the masculine identity is in direct conflict with safer sex guidelines, and will examine the implications of male gender roles and sexuality for women's AIDS risk and prevention. In addition, it will be shown how AIDS education itself is based on gender-typed beliefs about behavior.

Although the gender roles and sexuality of gay men have been examined in relation to AIDS [19], heterosexual male gender roles and sexuality have not been treated comprehensively. Moreover, psychosocial aspects of heterosexual male behavior have not been described in a composite way. Therefore, a comprehensive description will be provided in this article.

In recent years, despite attention to the special risk of women for HIV infection, AIDS cases among women continue to rise. The author maintains that this trend will continue until heterosexual men become the focus of prevention efforts. Therefore, this article calls attention to the need for a change in emphasis in AIDS prevention strategies targeted to heterosexuals in the U.S. This change must involve men as responsible for their health behavior and it must target men directly. In order to understand how the risk that women face for HIV infection differs from that of men, a description of male and female AIDS cases in the U.S. is provided in the next section.

GENDER VARIATION IN AIDS CASES

The largest transmission category for males is 'men who have sex with men' (MSM). This category comprises 62% of male cases. The next largest category for males is 'IDUs' which comprise 21% of male cases and 'IDUs who have sex with men,' (7%). The other categories are: 'undetermined risk' (5%), 'heterosexual contact' (2%), transfusion (1%) and hemophilia (1%) (Table 1).

The largest transmission category for females is 'injection drug use' (49%). This category represents the principal route of transmission for women from the beginning of the epidemic. Most women with AIDS resulting from heterosexual contact are sex partners of IDUs. The second largest category for females is 'heterosexual contact' (35%)(Table 1). It is this category where there is an important gender difference. The heterosexual category is the only

Table 1. U.S. Adult/adolescent* AIDS cases by exposure category and gender

	Gender					
	Males		Females		Total (%)	
Exposure category	No.	(%)	No.	(%)	No.	(%)
Men who have sex w/men	193,652	(62)	—	—	193,652	(54)
Injection drug use	65,512	(21)	21,746	(49)	87,258	(25)
Men who have sex w/men and inject drugs	23,360	(7)	—	—	23,360	(7)
Hemophilia/coagulation	3058	(1)	75	(0)	3133	(1)
Heterosexual contact	7679	(2)	15,487	(35)	23,166	(7)
Transfusion	3660	(1)	2521	(6)	6181	(2)
Other/undetermined	14,657	(5)	4528	(10)	19,185	(5)
Total (% of cases)	311,578	(100)	44,357	(100)	355,935	(100)

*> 13 years.
Source: Centers for Disease Control and Prevention, Surveillance Report, cases through December 1993.

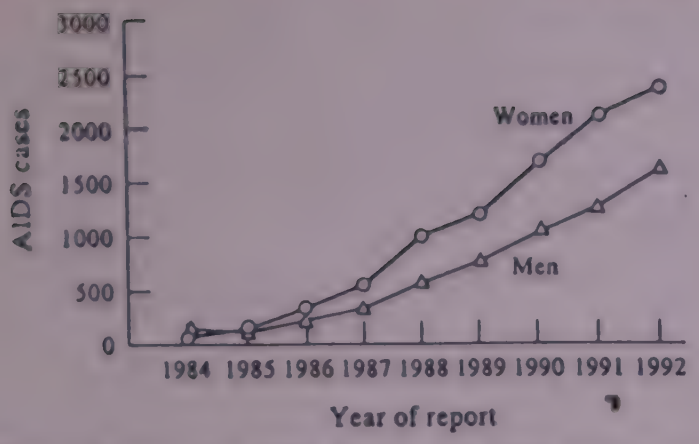

Fig. 1. Women with AIDS. Number of AIDS cases due to heterosexual contact by gender, U.S., 1984–1992. Source: Centers for Disease Control and Prevention.

transmission category in which female cases exceed male cases. Since 1985, the number of female heterosexual cases has accelerated more rapidly than male cases (Fig. 1).

The higher number of women with AIDS through heterosexual contact is the result of several factors. Most IDUs and all hemophiliacs are men. In addition, some men who have acquired HIV infection from sexual contact with men also have sex with women. For these reasons, there is a larger pool of infected men, and therefore women run a greater risk than heterosexual men of encountering an HIV-infected sexual partner [7, 11].

Women are at greatest risk for HIV infection through heterosexual contact in areas of high injection drug use, where they are more likely to encounter an infected male partner. In some states where there are lower numbers of IDUs, sexual contact with a bisexual man accounts for a substantial number of heterosexual cases among women [20].

In addition to women's higher risk of encountering an infected partner, efficiency of male-to-female transmission as compared to female-to-male transmission, also contributes to women's risk. Several studies of discordant couples have indicated that male-to-female transmission is significantly higher than female-to-male [21–23]. Women's vulnerability is increased because of a greater amount of HIV in semen as compared to vaginal or cervical secretions. In addition, there is a greater amount of mucosal area exposed in the vagina. Since the vagina serves as a receptacle, this area can be exposed to HIV for long periods of time. In contrast, the exposure of a susceptible male to an infected female involves a smaller vulnerable area and much briefer contact.

The heterosexual category has particular import for adolescents. While seven percent of total adult cases (>20 years) to date are from heterosexual contact, eighteen percent of adolescent cases fall in this category [7]. The gender difference between adult and adolescent cases is also significant. In 1992, while 13% of new adult cases (≥25 years) were female, 38% of new adolescent cases (13–19 years) and 26% of new adolescent cases (20–24 years) were female (Fig. 2). The proportion of adolescent female AIDS cases has more than doubled since 1987 when it was 14% [24].

Gender difference in cases resulting from heterosexual contact is especially striking among adolescents. Fifty-two percent of cases among female adolescents are from heterosexual contact. This figure compares to 2% of male cases. Heterosexual transmission represents the largest transmission category for adolescent females while hemophilia represents the largest transmission category for adolescent males (Table 2).

The growing rate of AIDS cases among adolescents is of special concern because adolescence is often a period of experimentation with unprotected sex, with multiple partners and drug and alcohol use. Anal sex is sometimes practiced by young people as a way to maintain virginity and to practice birth control [25]. The practice of unprotected anal sex is considered to be a major risk for HIV disease.

Adolescents are seen as an important group to target with information about AIDS because patterns of health behavior and risk taking are often established during the teenage years [26]. Adolescence is often filled with psychological feelings of invulnerability and even immortality. These feelings present obstacles for AIDS prevention efforts. This age group, however, is an especially important one, since change in behavior in this group can help to prevent future problems among adults.

This review of epidemiologic data has shown how the heterosexual AIDS epidemic continues to affect women disproportionately. The next section focuses on the behavior of men as members of the transmission categories described in this section. This focus is intended to illustrate women's special risk for HIV infection *vis-á-vis* male behavior.

MALE AIDS CASES

In the following discussion, the author will construct a profile of male sex partners by forming a composite of what is known about their behavior as male AIDS cases. This section will review what is

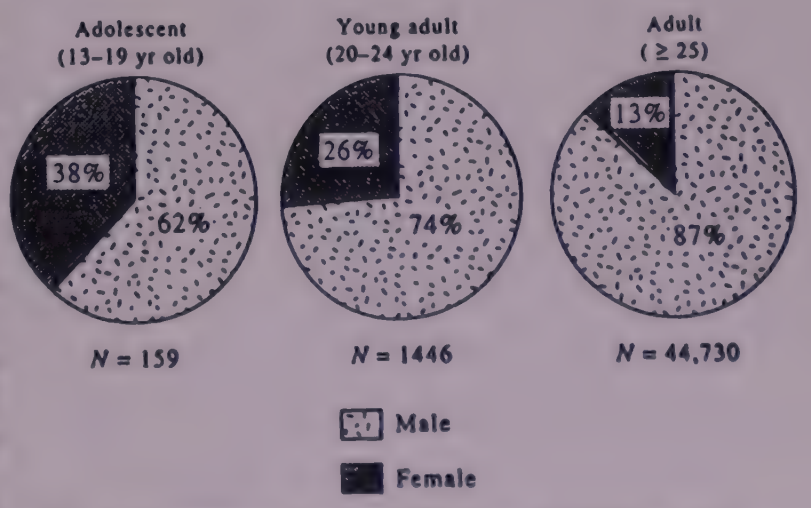

Fig. 2. Adolescent and adult AIDS by sex distribution, U.S., reported in 1992. Source: Centers for Disease Control and Prevention.

Table 2. U.S. Adolescent* AIDS cases by exposure category and gender

Exposure category	Males (%)		Females (%)		Total (%)	
Men who have sex with men	358	(33)	—		358	(23)
Injection drug use	72	(7)	99	(20)	171	(11)
Men who have sex w/men and inject drugs	47	(4)	—		47	(3)
Hemophilia/coagulation disorder	468	(44)	5	(1)	473	(30)
Heterosexual	22	(2)	254	(52)	276	(18)
Transfusion	45	(4)	44	(9)	89	(6)
Risk not identified	58	(5)	82	(17)	140	(9)
Total	1070	(100)	484	(100)	1554	(100)

*13–19 years.
Source: Centers for Disease Control and Prevention, Surveillance Report, cases through December 1993.

known about the behavior of men who pose a risk of HIV disease to women. This will be accomplished by examining the way in which these males have been targeted with information about risk behavior, in addition to what is known about behavioral change in response to this information. The emphasis will be on behavior among males, and behavior of females will be discussed only as it relates to that emphasis. For both adults and adolescents, injection drug use is the primary link to the heterosexual population of AIDS cases.

Injection drug users

Injection drug users are usually identified in one or both of two settings: drug treatment centers and prisons. Seventy-five percent of users entering treatment are male [27] and 90% of prisoners in the United States are male [28]. Incarceration is often associated with drug use in some way. Almost all poor drug users will at some time rely on some type of criminal behavior to support their habit [28]. Many drug users were using drugs at the time they committed the crime for which they are incarcerated [27].

Since mainly what is known about IDUs is tied to their contact with either drug treatment and/or prison, most information about them concerns their socio-economic status and their criminal behavior. Much less is known about their gender identity and sexuality.

Most imprisoned men with AIDS have been infected through sharing drug injection equipment [28]. Up to one-third of inmates report homosexual activity and up to one-half report injection drug use [29]. Both consensual and coerced sex between inmates does occur. Many men who engage in consensual sex with men in prison return to a heterosexual life upon release. These men will usually self-identify as heterosexual, as that is the life they left and plan to resume upon release. For these men, sex with men is seen as a temporary, situational behavior. For this reason, they may not be aware of the risk for HIV infection that their behavior poses to themselves, and to their female partners upon their release.

Men in prison may engage in risky sexual or drug behavior because they are not knowledgeable about HIV and do not have access to information about AIDS. AIDS education in prisons is problematic. This information challenges some of the basic tenets of prison administration. Since neither drug use nor sexual activity is supposed to take place in prison, information about HIV risk reduction is seen as acknowledging that these prohibited behaviors occur. And distributing condoms appears to encourage these behaviors. Some prisons do make condoms available [29]. Other prisons, however, have expressed concern about the possible use of condoms in drug packaging, firebombing, as well as for strangulation weapons [30]. Clean needles and bleach are not distributed to IDUs because of concerns about security [28]. Bleach has, in fact, been used offensively by prisoners against correctional staff [30].

A vast majority (85–90%) of drug users do not enter any type of drug treatment [30]. There are more IDUs in prison than other setting, including drug treatment centers and hospitals [29]. Public health authorities feel that correctional facilities are the best means of access to a group that is otherwise elusive to educational efforts. The recommendations of public health, however, often are at odds with those of correctional officials.

AIDS risk reduction has also been seen as running counter to the goals of drug treatment. Advice to users on how to shoot drugs safely is in direct contradiction to the primary aim of drug treatment centers. Thus, information about HIV risk-reduction is not available at all treatment centers, and users are not exposed to this information in this setting.

However, those treatment centers that provide information do have some effect. Exposure to drug treatment programs which provide information about AIDS, has been associated with reduced risk of HIV infection among users [31]. And sexual risk reduction among users in treatment was related to personalized risk: either knowing someone with AIDS or having one or more friends die from AIDS [31].

Since most drug users do not choose to enter treatment, it has been necessary to find other forums for the delivery of HIV risk-reduction materials. Street outreach has been the primary approach used. As part of this effort, peer education programs that seek to empower indigenous persons have had some success in getting IDUs to use safe injection practices [26, 32]. However, these programs have been less influential in

changing sexual behavior, particularly in getting IDUs to use condoms. IDUs are known to be inconsistent or ineffective users of contraception [26].

Many IDUs who have changed to safe injection practices are still unlikely to use condoms [26, 32]. This was true in San Francisco, where safe injection practices increased, with only a small increase in condom use by IDUs [31]. However, an increased use of condoms by this group has been attributed to intensive street outreach [31].

A study of street IDUs found that peer support and a sense of self-efficacy were related to changes in sexual behavior [31]. In another study, situational factors, such as availability were predictive of condom use while self-efficacy was not [31]. These findings suggest the need for more research on variables predictive of condom use. It may be that factors which lead to changes in sexual behavior are different for street users compared to users in treatment or in prison.

Much has been learned from ethnographic studies about the behavior of IDUs [26, 32]. These studies have found a wide range of behaviors related to injection drug use, as well as great variance in sociocultural contexts of drug use that are relevant to HIV [31]. Such variation suggests the need for similar research on the sociocultural context of sexual behavior of IDUs.

Both male and female IDUs are resistant to the use of condoms in an established relationship [33]. Because they do not have multiple partners, these users do not feel that it is necessary to use condoms. IDUs do, however, perceive a need to use condoms when having sex with a prostitute, when engaging in prostitution, and when their main partner is engaging in prostitution [33].

The drug behavior of male IDUs is often clandestine. It is often a behavior that they engage in with other males and keep secret from their female partners. Female sex partners (FSPs) of these men are often not aware of their partner's past or present drug behavior. Many men engage in this behavior for years without their female partners ever knowing. Male IDUs usually have FSPs who do not inject drugs themselves [34]. Although these women are at risk, they may not perceive themselves as vulnerable, and are therefore difficult to reach with information about AIDS. Attempts to reach nondrug-using FSPs through drug treatment and other programs for drug users have not been successful [35]. Some FSPs are aware of their partners' drug use but are unwilling to confront them because for various reasons, including fear of physical violence and loss of economic support.

Women who do inject drugs often report that they were introduced to drug injection by a male sex partner or family friend [26]. Women also may seek assistance with injections from these persons [26]. It does appear that the role of male IDUs is important in determining the risk for HIV of women who inject drugs as well as those who do not.

Men who have sex with men and women (MSMW)

The categorization of homosexual and bisexual men into one transmission category in surveillance, 'MSM', is highly problematic because of inconsistencies between sexual identity and sexual behavior. The category identified as bisexual can include men who are gay-identified but report a female partner at some time in the past; men who are bisexual and who self-identify as such; and men who self-identify as heterosexual, but occasionally have sex with men [36]. These three categories, as well as the exclusively homosexual category, can also include MSM for pay.

An ongoing international research project on MSMW found that very few self-identify as bisexual [37]. Bisexual identity appears to vary among cultures. Most native men in Mexico who practice the active, insertive role in male-to-male sex, and who also have sex with women, do not view themselves as homosexual or bisexual [20]. The behavior patterns of immigrant Mexican men usually resemble patterns established in their native country, unless they have undergone intensive acculturation [20].

In an analysis of surveillance reports from men with AIDS who reported having had sex with men, Black men reported bisexual practices more frequently that did White or Hispanic men [20]. From data on HIV-infected male blood donors, bisexual behavior was reported more often by Black donors than by White or Hispanic donors [20]. It has been suggested that Black men may adopt the bisexual lifestyle because of the stigma surrounding homosexuality in the Black community [20, 38].

The particular setting in which sex occurs is also important, and some men will have sex with men only in a specific context. For example, in prison some men may have same-sex relations because they prefer these, but others have same-sex relations because that is the only available option. This may be true in military settings as well. Since the behavior is situational, these MSMW may self-identify as heterosexual.

The risk posed by MSMW is further increased by the fact that they are often IDUs [20]. In a study of injection drug use, bisexual-identified men were twice as likely as gay-identified men to report drug use [20].

This was also found in a study of 200 male prostitutes [41]. Bisexual-identified prostitutes were more likely than homosexual-identified prostitutes to use cocaine or heroin intravenously. Although these prostitutes had paid sex with men, more of their sexual encounters were with women [39].

Because of the clandestine behavior sexual and drug behavior of MSMW, their FSPs are often unaware of their risk for HIV. It is especially significant that in an analysis of surveillance cases of AIDS from 1981–1990, one-fourth of men who self-identified as bisexual were married when they died [20].

Bisexual men who live in different social contexts manage their bisexuality differently and as a result, have different practices with regard to safer sex. One

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study that compared three groups of MSMW—bisexual-identified, gay-identified and heterosexual-identified—found that bisexual-identified men practiced safer sex with both men and women [40]. But gay-identified and heterosexual-identified men practiced safer sex with men, but not with women [40]. Because of the different social contexts in which MSMW interact, there is a need for health education campaigns to target these men as members of these different contexts.

The only behavior that MSMW have in common is their anonymous use of public sex sites [41]. AIDS educators have used these sites as settings for the distribution of risk reduction materials [41]. MSMW are often highly closeted and usually do not respond to gay-identified educational programs [42]. Because of the lack of self-identification among MSMW, educators may need to target these men in heterosexual settings such as the workplace [38]. MSMW and who self-identify as bisexual appear to be the group that is most responsive to safer sex education. Therefore, it is important that they be targeted as a separate group. There is also a need for therapy and support for bisexual men and greater visibility of bisexual organizations [43, 44].

As compared to the other groups of male AIDS cases, far less is known about behavioral change among MSMW. This is due to the problems in identifying and targeting this group of men. The risk that MSMW present to women has to do in part with their clandestine sexual and drug activity. This group of men serves as a good example of how behavioral strategies need to focus on men rather than women, since these women are unaware of their partner's sexual and drug activity, and thus are unaware of their risk.

Hemophiliacs

Hemophiliacs are different from the two groups of male sex partners so far described, in that their infection is not the result of sexual or drug behavior. Rather, it is the result of the use of contaminated factor concentrate, the blood product needed to treat their condition. The risk that hemophiliacs present to their female partners is through unprotected sex.

The risk for HIV that hemophiliacs pose to women has to do with the number who are infected. From the onset of the epidemic, the level of infection in this group has been very high. As a group, the hemophiliac population has the greatest proportion of cases in the U.S. [45]. The National Hemophilia Foundation estimates that the level of infection among this country's 12,000 severe hemophiliacs could be as high as 90% [45]. Despite this, behavioral change to reduce risk to female partners has been slow to develop in this group. This group illustrates the difficulty in implementing behavioral change since as a group, compared to other groups of male AIDS cases, hemophiliacs are often more enlightened about health, because of the demands of their own illness.

Despite their close contact with the health care system, hemophiliacs do not use condoms consistently [26, 46, 47]. The level of unprotected sex practiced by discordant couples, even after being apprised of the dangers, seems inconsistent. These couples often had to make decisions about having children because of concerns about transmitting a genetic disease prior to the advent of AIDS.

Adolescence is often filled with various types of risk-taking, including sexual risk-taking, and adolescent hemophiliacs have been particularly difficult to induce to change their sexual behavior [48]. Adolescent hemophiliacs tend to be similar to unaffected adolescent males in their tendency to engage in risk-taking behavior [48]. Barriers to risk reduction among adolescent hemophiliacs include denial; decreased feelings of masculinity and sociability; and inheritance of a stimatized chronic disease [48].

Infected adolescents are the age group of hemophiliacs that has received the most media attention involving publicity about school attendance. As a result, young hemophiliacs often feel isolated in school settings. HIV infection comes at a critical time in the lives of these adolescents. The introduction of factor concentrate in the mid-60s allowed them to be involved in physical activities from which they formerly had been excluded. Prior to the introduction of this clotting factor, sports had been an inappropriate activity for them because of the risk of injury [47].

Infected adolescents often describe feelings of confusion about their sexuality. Adolescents describe feeling confused over whether or not to date at all and if so, whether to have sex [47]. They also express confusion over whether to disclose their hemophilia and HIV seropositivity to their female partners [49].

Today hemophiliacs have less contact with the medical system than they once had, because they are now able to self-administer their infusions. When they did not have this type of control over their bleeds, they would often hide the nature of their illness because of fear of discrimination [50]. In this way, factor concentrate liberated hemophiliacs and allowed them to achieve normalcy in their lives. Now, however, they are again reluctant to disclose their hemophilia to friends and employers because of its association with AIDS. Their reluctance to disclose is not in the interests of their own health, as immediate action is needed to control bleeds which can be life threatening. A great deal of passing and denial exists among the hemophiliac population because of this medical stigma [51]. The National Hemophilia Association itself was initially somewhat reluctant itself to take action about contaminated factor concentrate because this concentrate had done so much to improve the lives of hemophiliacs [52].

The reluctance on the part of hemophiliacs to disclose their hemophilia and their HIV seropositivity, may be an attempt on their part to avoid any association with homosexuality or injection drug use.

The National Hemophilia Society contributed to homophobia in its initial recommendation that gay men be prevented from donating blood as a way to control contaminated factor concentrate [52]. Hospital staff report that hemophiliac patients with AIDS tend to go out of their way to make their identity and origin of their illness known [53]. Also in an effort to differentiate themselves from homosexual patients, they will 'display' their wives and children.

Perhaps in part due to homophobia, hemophiliacs have not sought out AIDS education or counseling in great numbers. There are early reports of a few isolated hemophiliacs who sought information about AIDS from gay service agencies, because these agencies were the only source available to them. For the most part, however, there appears to be a reluctance among this group of men to deal with HIV disease [47]. Initially when learning that some factor concentrate was contaminated, some men chose not to be tested even though they suspected they were infected [47]. Others chose to cut down on their factor concentrate treatments [50, 52]. Generally hemophiliacs have not been in the political forefront in the AIDS epidemic like gay men, even though a majority are infected. The National Hemophiliac Foundation reports that few seek out therapy or attend support groups; instead, it is much more common for their wives to do so [54].

Transfusion recipients

Compared to other groups of male AIDS cases, much less is known about transfusion recipients as sex partners. This probably stems from the fact that in contrast to hemophiliacs, they were not a group already identified because of a previous medical condition. Often transfusion recipients are categorized with hemophiliacs because both have received contaminated blood products. They are like hemophiliacs in that their infection is not the result of sexual or drug behavior. They are also like hemophiliacs in that many chose to engage in unprotected sex despite warnings about risk [26]. But male transfusion recipients are unlike hemophiliacs in that there can be many reasons for their need of blood transfusions, and they may have not had as much contact with the medical system.

In reviewing the male transmission categories, it becomes clear that not a great deal is known about the health behaviors of some male sex partners. Little is known about the specific behavior of heterosexual men as sex partners. For this reason, it may be useful to examine the behavior of male sex partners in other roles. Clearly the most information available about the behavior of male sex partners is in their role as clients of prostitutes.

Paying and nonpaying partners of prostitutes

Several early studies on heterosexual transmission involved prostitutes [55, 56], and female prostitutes, as a group of sex partners, have received most of the attention during the AIDS epidemic. Prostitutes and their paying partners are considered to be primary groups at risk for HIV infection. Secondary groups at risk are prostitutes' nonpaying partners, and male or female partners of clients.

Prostitution and injection drug use have always had a close affinity in the AIDS epidemic in the U.S. and Europe. These behaviors have provided an important interplay between sex and drug use, and are relevant to a discussion on male sex partners for three reasons:

(1) Early on in the AIDS epidemic, prostitutes were seen as a primary risk group, a conduit to secondary risk groups in the heterosexual population [57];
(2) Numerous studies of prostitutes in the U.S. and Europe have found that their primary risks are injection drug use or sex with an IDU [33, 58–63]; and
(3) The main sexual partners of prostitutes are often IDUs [35, 58–60].

Prostitutes have received far more attention than other FSP, as well as paying and nonpaying partners, for their role in the heterosexual AIDS epidemic. Accordingly, a review of major findings on what is known about prostitutes' behavior may inform our discussion on the behavior of male sex partners.

Numerous studies have found that prostitutes are more likely to use condoms with paying partners than nonpaying partners [58–60]. Nonpaying partners include boyfriends or husbands. Nonpaying partners pose a risk to prostitutes because they often have histories of injection drug use. The CDC multi-center study of female prostitutes found that the most likely source of infection for prostitutes was their nonpaying partners [58, 59]. Because of prostitutes' risk of infection from nonpaying partners, their pursuit of career alternatives other than prostitution may not serve to reduce their risk of HIV disease [64]. Nonpaying partners often do not consider themselves at risk because their female partners use condoms with clients.

Even attempts to persuade paying partners to use condoms are often met with resistance. Worldwide prostitutes report that the main reason they do not use condoms with paying partners is because of the partners' resistance or refusal [65]. In efforts to educate prostitutes and encourage behavioral change, AIDS Community Demonstration Projects have found that it is important to treat the adoption of condom use with paying partners and with nonpaying partners as separate processes [33].

Various efforts have been made to train prostitutes in negotiation skills to persuade their partners to use condoms [65]. Prostitutes have been advised to refuse sex to partners who were not willing to use condoms. Prostitutes in Nigeria united in a campaign to refuse such partners [16]. These prostitutes enlisted the support of veteran prostitutes and hotel managers when clients tried to renege on their agreement to use

condoms. The success of these prostitutes is further evidenced by the fact that after one year, they were able to increase their fees, an indication that they were able to be more selective in accepting clients.

A female condom acceptability trial conducted in Paris among prostitutes and their clients found a fairly high acceptability rate when compared to the male condom. Three-fourths of the clients and one-half of the prostitutes found the female condom acceptable in comparison to the male condom [66].

Few efforts have brought paid and unpaid FSPs together. One exception is a project in Zaire that joined prostitutes and members of a church group known as 'Mother's Club.' After discussion sessions about AIDS prevention, they made plans to organize educational sessions for their husbands as well as older children [16].

AIDS prevention programs for prostitutes have realized that the control of HIV infection will also require behavioral change among clients of prostitutes. Although many programs have been successful in reaching prostitutes, reaching clients has proven to be a more difficult task [65]. Clients are not a well defined group, and often have little in common besides their utilization of commercial sex services.

Some AIDS prevention programs employing prostitutes as peer educators have been successful in reaching clients [18]. A few programs have included all persons in the social networks of prostitutes, including both their paying and nonpaying partners. These programs also have used males working as bar, brothel, and hotel personnel to educate clients [18, 67, 68]. In the Netherlands, clients of prostitutes organized and distributed condoms to other clients [65]. Programs in Africa targeting potential clients of prostitutes include interventions aimed at truckers and the military [68]. These programs have found it far more difficult to reach secondary groups of persons at risk, partners of prostitutes and clients. In an effort to reach high risk persons, one program targeting fishermen trained fish buyers as AIDS educators in an inaccessible lakeshore in Zimbabwe [69]. It appears that clients of prostitutes have been targeted mainly in the workplace. What has been learned about condom use by male sex partners of prostitutes could possibly be used to inform prevention programs for other male sex partners, similar to the way in which prevention programs for paid FSPs have informed prevention programs for unpaid FSPs.

TARGETING MALE SEX PARTNERS

In reviewing information about various types of male sex partners, it is apparent that reaching men with HIV risk-reduction information can be difficult. In some cases, and for various reasons, men will not self-identify as sex partners and may not be reached with information about AIDS. In other cases, because of various roles that men take as sex partners, they may not constitute a well-defined target group. In either case, they are not reached with information.

By comparison, women have been targeted much more with information at various sites, including churches, laundromats, Womens', Infants' and Childrens' (WIC) centers, social service agencies, beauty shops, family planning and prenatal clinics, and sexually transmitted disease (STD) clinics [26]. A number of these sites are related to womens' roles as mothers and homemakers. Women traditionally have been responsible for their own health and the health of their children and in fulfilling these responsibilities, often have contact with health and social service agencies. Heterosexual men are not targeted at as many diverse sites. Instead, men have been targeted primarily as employees in the workplace [18]. AIDS needs to be conceptualized as a men's health issue. Whenever women are included as a specific target group, there is an implicit message that men are not.

One reason that women have been the primary target of AIDS prevention efforts is that they are easier to reach and more approachable [70]. It could also be that women are more likely than men to respond to health information. A case in point is Magic Johnson's announcement that he is seropositive. That announcement had a greater impact on Black and Hispanic women than on Black and Hispanic men [71, 72].

GENDER ROLES, SEXUALITY AND AIDS

In general, differences in health seeking behavior between men and women have been explained as a result of gender role training [73, 74]. Women are said to have a more sharply defined sense of the future and are more responsible about health concerns [75–77] Due to socio-cultural gender roles, women are often the caretakers in their families with the result that they take responsiblity for the health of their entire family, including their sexual partners. In this role in relation to HIV disease, women become risk managers for both their partners and themselves [78], and men fail to take responsibility for their own health.

Women have sometimes been the primary targets of AIDS prevention campaigns. The second year of the five-phase national media campaign, *America Responds to AIDS*, targeted women and sexually active adults with multiple partners [79]. (In the subject index of the catalog of *America Responds to AIDS*, there are 22 references to women and only 15 references to men, excluding one reference to gay men [79].) This campaign which took place in 1988, aimed to reach a broad range of women, including women with multiple sex partners; female partners of IDUs; college students; single parents; and the newly divorced [26]. While this effort is laudable and the attention clearly overdue, the danger is that it serves to reinforce the idea that women are responsible for safer sex. This is especially true when a similar campaign specifically targeting men is not made.

A situation similar to the subject index of the

America Responds to AIDS campaign is found in the subject index of the HIV and AIDS Education and Prevention catalog published by the Centers for Disease Control and Prevention. The catalog lists 26 references to women and 6 references to men, excluding one reference to gay men [80].

The exclusion of males in safer sex campaigns is also found in popular culture. Condom advertisements and discussions of safer sex have been included in magazines that target female audiences but not in those that target male audiences [12]. This exclusion is also found in the film, *Sex, Drugs, and AIDS* aimed at young people. The film includes a segment where a group of young women are discussing strategies to get their boyfriends to use condoms. There is no similar scene showing a discussion of condoms among young men [12].

Men are often targeted as a member of a couple rather than alone [18]. Men are sometimes shown somewhat coincidentally as part of a couple, such as sex partners of prostitutes [18]. Condom promotion campaigns deliberately target couples rather than individuals [68]. The problem with this approach is that men are targeted in their role as sex partners which could serve to relieve them of responsibility for their own health.

It is important to examine the actual content of information about HIV infection in order to assess how it may reinforce traditional gender roles. Even when men are targeted, the information is sometimes general and not in any way gender specific. A good example is the brochure, *Men, Sex, and AIDS* produced by the American Red Cross (1988). The brochure does not address specific male concerns about AIDS, and does not differ very much from the more general brochure entitled, *HIV Infection and AIDS* (1989). The brochure, *Women, Sex, and AIDS* (1988) does, however, contain information specific to women, including considerations about pregnancy. This information seems appropriate to include in the brochure for men, since it is relevant to their role as fathers. In the same way, in much informational literature, advice to be tested is given to women who feel they could be at risk for HIV infection and are considering having children. The same advice is not given to men who are considering becoming fathers [10].

The impact of a positive antibody test on women's decisions about childbearing has been given considerable attention [81, 82]. The impact of a positive test on men's decisions about having children, however, has not. More attention needs to be paid to reproductive counseling for men, since reproductive issues are relevant to men as fathers. It is not the case that male decisions affect only them. Lowering the rate of infection among males has consequences for both women as sex partners and their future offspring.

A primary motivation of mothers for not becoming infected is that they are concerned about the future of their children [65, 68]. Accordingly, AIDS prevention messages have incorporated themes about the need for mothers to stay healthy for their children. In the same way, prevention messages could promote the need for fathers to stay healthy for their children.

A certain amount of sexism against men seems present in AIDS prevention information. For example, it is assumed that the same messages that work in reaching women will not work in reaching men. Perhaps in the lack of attention to men, there is an underlying assumption that men really do not care about safer sex practices and that men will not be motivated to change their behavior. Men are not treated as being responsive to health concerns, but instead as being uninterested and dependent on women. A negative image of men is present in this information.

Programs that promote condom use among MSM have had success, both in terms of efficacy and acceptability [83]. Condom promotion programs for heterosexual men, however, depend more on the acceptability of condoms to the male partner than their actual effectiveness [83]. The AIDS epidemic has served to restore to men power over the consequences of sexual behavior [83]. Women's reliance on the cooperation of their male partners to use condoms is a return to a dependence on men similar to that of the 1950s. The role of a woman in this interaction is to persuade her partner to use a condom or to terminate the relationship if he does not [84]. This issue over sexual decision-making must be addressed by women every time they ask a male partner to use a condom [78].

Rather than directly targeting men as responsible individuals, AIDS prevention has given instructions to women on how to negotiate safer sex with their partners. Some programs have even designed appropriate communication strategies for women to use in response to various reasons that men give for not wanting to use condoms [18, 65]. These strategies work only in those relationships where women have some control in sexual decision making. For women who do not have this control, these strategies are not relevant. But perhaps even more important, these strategies serve to reinforce the idea that safer sex is a female concern and responsibility. They fail to address the issue of why women should even have to negotiate safer sex in the first place. That is, they fail to address why safer sex is not a male concern and responsibility.

Because of the problems associated with condom use, other types of prophylaxis have been recommended, such as barrier methods that would give women more control [83]. The current introduction of the female condom may empower women [83]. Since it is used by the woman rather than the man, it gives women greater control over sexual decision making. Ironically, while empowering women to some degree, it may also free men from taking responsiblity for their health [10]. Thus, there is a certain amount of ambivalence among women about the real advantage of the female condom.

Lessons from family planning

Much could be learned about designing AIDS prevention from previous work in family planning programs. Fertility research has focused on women and as a result, more is known about female responses to family planning. Recent research, however, has found that males do favor family planning [86]. It is lack of communication between partners, rather than male opposition, that usually accounts for failure to use condoms [88]. But even though most men feel decision-making about family planning is a joint responsibility, many prefer that their female partners take responsibility for contraception [86]. And family planning programs have found that contraceptive methods used by women that do not involve partner consent are most effective for preventing pregnancy [83, 85].

Research has found that although men are interested in family planning, they do not want to learn about it from their wives [18, 65, 86]. However, most men report that they learn this information from either their wives or friends [86]. Men do not generally learn about family planning from health care professionals because of the focus of family planning on women. It does appear that the lack of family planning information and services for men, rather than a lack of interest on men's part, has prevented men from taking an active role.

Programs that encourage men to take a more active role have used discussion groups, lectures, drop-in centers, counseling, 'Father's Clubs', and videos [86]. Some programs have provided family planning information in the workplace. Peer training programs using male counselors have been effective [86].

Family planning research has found that men's reasons for favoring or opposing family planning differ from women's reasons [18, 65]. For example, men and women sometimes differ in their views about the number of children they want. In response, 'male motivation' programs have developed approaches that address men's concerns specifically. Family planners in these programs have found that special attention to men can produce a broader and more sustained adoption of changed sexual behavior [18].

Family planning programs also learned that in order to be effective, it was necessary to involve males. These programs also found that men were actually interested in getting information but did not have access to it. It does not appear that strategies for AIDS prevention have drawn on the lessons learned from family planning. In fact, just like early family planning programs, AIDS prevention has focused on women, at times to the exclusion of men.

AIDS and masculinity

Family planning messages have appealed to men's sense of responsibility to support their families, and family planning programs have found that topics of special interest to men can be tied to family planning. For example, some condom social marketing programs that tied their brands to sports have been effective [86]. Some social marketing campaigns aimed at getting men to use condoms for HIV prevention have found it important to separate condom use from family planning [16]. These programs have found it useful to associate condom use with masculinity, promoting the idea that a man proves his masculinity by using condoms. While this may be effective for some men, it is based on traditional associations of what manliness is. Perhaps a more important message would be that real men take responsiblity for their own health by using condoms.

Associating condom use with manliness also reinforces the traditional associations between masculinity and sexual performance. Traditional socialization teaches 'real' men to initiate sex and to be in charge from beginning to end. This training also socializes men into thinking that 'real' sex must involve penetration. Penetration is seen as a goal in all sexual encounters. Nonpenetrative types of sex that do not require condoms are seen as a poor substitute for the real thing. In some cases, nonpenetrative sex may be practiced but only as foreplay leading up to penetrative sex. The traditional idea that sex is tied to male performance and must involve penetration is not changed.

Traditional gender role socialization also results in different responses to using condoms by men and women. Since sex is tied to male performance, condoms are seen as interfering with that performance. In a similar way, women are trained not to be knowledgeable about sex and not to let their sexual needs and preferences be known to their partner. Women may be reluctant to take the initiative in practicing sex that does not involve penetration. Women's sexuality continues to be tied to marriage and reproduction [87].

As a result of traditional male socialization, many men believe they must appear to know everything about sex. Because of this, men may have a difficult time learning about sex or about AIDS from women.

Traditionally men are trained to appear as though they are always ready and willing to have sex. In response, women are trained to control men's sexual appetite by saying no. Women are seen as needing to be seduced and coerced into having sex. Traditional gender role training promotes different views and values about sex for men and women. Men are trained to be the aggressors, the active partners in all sexual encounters, and women, the passive recipients. Boys learn that sex is something that they are expected to do to girls, while girls learn that sex is something that is supposed to happen to them [10].

Men are trained to see sex as a conquest with the number of conquests serving as an indicator of their manliness. This kind of training runs counter to safer sex guidelines that promote monogamy. Monogamy is not seen as an attractive way to demonstrate masculinity according to traditional socialization. One

study that examined gender differences in beliefs about safer sex found that men were less likely than women to mention monogamy as a option to prevent AIDS [88].

Also related to manliness, traditional socialization teaches men that a 'real' man is heterosexual [10, 89, 90]. To be heterosexual, above all, is not to be homosexual. It is significant that males show higher rates of homophobia than females and that gay bashing is especially high among young males in their teens and twenties [89]. It is also relevant that heterosexual males are the most resistant to homosexual transmission in families with HIV-infected gay members [91].

The lack of response to safer sex guidelines by heterosexual males could be an attempt on their part to disassociate themselves from AIDS because of homophobic fear. As long as these homophobic fears exist, men will continue to deny that HIV has any relevance to their lives. They will continue to deny their own risk of infection and the risk that they pose to their female partners.

Since gay sexuality has been less tied to rigid gender roles than heterosexual sexuality, gays have been more able to adopt safer sex practices. Sexuality issues have been dealt with as part of a gay social and political agenda [90]. In contrast, heterosexual sexuality has not had this political agenda and instead, has been tied to traditional gender role beliefs which discourage safer sex.

This section has shown how traditional beliefs about masculinity discourage safer sex practices. Women continue to be at risk because of rigid gender role practices. The final section offers some concluding remarks about gender, sexuality and the AIDS epidemic.

CONCLUSION

This article has examined the relationship of male gender roles and sexuality to the control of HIV disease. The implications of these roles for the continued spread of infection among women have been shown. The focus of AIDS prevention on women has been shown to be misguided in that it has made women primarily responsible for safer sex practices, without attention to important gender power differentials. Controlling HIV disease will require acknowledging the fundamental differences in power relations between men and women.

The growing number of cases among adolescents highlights the need to recognize and change gender power relations that promote the continued spread of the epidemic. This will require that sexism and homophobia be confronted early on in the socialization process of heterosexual males.

Recommendations for research

Based on the discussion offered in this article, it appears that educational messages were designed and promoted without clear and detailed information about sexual and drug behavior. There is a lack of systematic research on heterosexual adults particularly. The U.S. government has consistently prevented a national sexual behavior study from being conducted because of political opposition to questions about sexual practices [92]. As a result, there is little up-to-date data on sexual behavior. What data exist are based on small studies and add-on questions to household surveys [92]. In addition, researchers have not studied the social context in which men interact with one another, and with other women, as it relates to AIDS prevention. Therefore, the author maintains that more research on heterosexual behavior should be conducted first in order to provide good models before large scale prevention programs are implemented. Until this research is done, it will be difficult to implement prevention programs which are effective in moderating the AIDS risk behavior of men. It is encouraging that a future direction of research on sexual behavior of men is moving in that direction [93].

Control of the epidemic will also require learning more about the behavior of heterosexual men in the AIDS epidemic. What is known about men is often fragmented and unclear. Often the focus on men quickly shifts to women. A good example here is provided by topics included at the International Conference on AIDS held in Amsterdam in 1992 [94]. There were 22 formal sessions on issues specific to women [70, 94, 95]. However, there was only one session that focused exclusively on attitude and behavioral change of heterosexual men, and that session was actually about women, not men [96]. In fact, one of the presentations at that session referred to women rather than men in its title [72]. According to conference organizers, only a few abstracts on behavioral change of heterosexual men were submitted to the conference, and as a result, no conclusions were reached on how to change male attitudes and behavior [70]. However, the need for rapid development and implementation of programs to change behavior of heterosexual men was emphasized in the summary of conference proceedings [70].

Men must be the focus and priority of AIDS research and education. Researchers need to study how men differ from women in their perceptions of risk, interpretations of AIDS prevention information and determinants of risk behavior. While changing the focus to men, it is important that it not be kept separate from AIDS prevention for women. What is learned about behavioral change among men can inform and affect AIDS prevention for women. For example, if men change their drug and sexual behavior, this will have health consequences for their FSPs.

The new focus on men is not intended to mean that women should no longer be targeted. However, they should no longer be made to feel personally responsible for male behavior. Rather, they should be targeted with alternative gender roles designed to empower them in their relations with male partners.

Recommendations for health policy

This article has illustrated the problems in gaining a clear profile of men in the AIDS epidemic. Often the term, 'heterosexual' is used to describe only women or men as members of a couple but not separate from women. AIDS prevention strategies will have to be sensitive to the multiple and often clandestine sexual practices of heterosexual-identified men. These strategies must work on developing a more clear profile of males. Then, these strategies must target men directly, not as members of couples, and not through women. Women may have male sex partners who display a wide range of risk behaviors. Until a clear profile of these males is gained, their FSPs will continue to be vulnerable.

The problems that affect AIDS prevention for men are often part of a more general problem in educational messages. Targeting has been selective, fostering divisiveness and a sense of otherness [92]. Men have been targeted with information about AIDS to some extent as members of different groups of male AIDS cases [18, 90]. However, they have not been targeted as a composite group of heterosexual male sex partners.

Men also need to be targeted in more diverse settings. Men can be targeted in many of the same ways that women have been. In the same way that AIDS prevention has targeted women in their role as mothers, men can be targeted in their role as fathers. In the same way that women have been peer educators to educate other women, men can be peer educators to other men. The same kind of innovation that has been used to reach women can be used to reach men.

Male issues related to AIDS are long overdue and must be included as part of mens' health agendas. The recent men's movement would appear to be an appropriate forum, since this movement is dealing directly with both men's health issues and the ways in which traditional roles oppress men [97].

AIDS prevention strategies will have to avoid contributing to gender role stereotypes that run counter to the control of HIV disease. These strategies will have to be sensitive to the way in which reinforcement of traditional masculine identity encourages the continued spread of the epidemic.

Control of the epidemic will require that men be given clear and concise gender-specific information about AIDS. But men must not only be given information; they must be expected to act on it. Control of the heterosexual epidemic will require sustained behavioral change among men, and unless men become a major focus of research and prevention efforts, women will continue to be at risk for HIV disease.

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PANOS BRIEFING

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AIDS: SCIENCE AT A CROSSROADS

The science of AIDS and its impact on the developing world

In 1995, AIDS research stands at a crossroads. Over the past 10 years, much of the research on AIDS has centred on trying to find a cure or a vaccine, with very limited results. While more has been learnt about AIDS in a short time than about almost any other disease, many of the basic questions about the development of AIDS and the behaviour of HIV, the virus which leads to AIDS, remain unanswered.

And the few treatments available for people with AIDS are expensive and beyond the budgets of developing countries — which account for nine-tenths of the worlds' cases of HIV.

This briefing looks at the main scientific issues the epidemic has raised so far and the challenges ahead. It reviews the basic information about HIV and AIDS and the available treatments for the disease, setting out what is known and what is still uncertain. And it analyses some of the controversies surrounding HIV.

Since 1981, when AIDS was first identified, research has moved fast but not fast enough to satisfy anyone. A scattering of antiviral drugs exist that slow down HIV's replication, but none can prevent the eventual onset of AIDS or death. Vaccines are now on trial, but even the most optimistic scientists suspect that these will at best offer only partial protection against infection. It is also unlikely a successful vaccine will be available in the next 10 years. Meanwhile, people continue to become infected at the rate of several thousand each day.

Some scientists now believe that it is now time to re-emphasise basic research, to try and answer some of the enigmas posed by HIV. For instance, how does HIV attack the immune system, the body's first line of defence against infection? Why do some people with HIV stay healthy for many years, while others develop AIDS quickly and die? Until we hold the answers to these questions, it may prove impossible to find an effective cure for the disease, or a successful vaccine.

For the short to medium term, the outlook is difficult. Few scientists believe it is realistic to expect to find an outright cure for AIDS. But many hope it will become possible to devise therapies that will dramatically slow down the disease process and buy many years of healthy life. Even that more modest goal, however, is still a long way off. Moreover, even if new therapies and vaccines are designed, will they be affordable and available for developing countries?

Beyond the biomedical problems, there are complex behavioural and social difficulties. Even though there are technically simple means such as condoms to stop the virus from spreading, those means are not available or acceptable to many. Poverty and cultural constraints continue to deprive people of control over their own lives and the power to protect themselves. It is not enough, for example, to advise people to use condoms when many women have no say in their partners' behaviour and when childbearing defines a woman's identity and status.

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WATCH OUT FOR

Accurate terminology

Do not confuse HIV and AIDS. HIV, the human immunodeficiency virus, is the virus which leads to AIDS, the acquired immune deficiency syndrome. The vast majority of people who are infected with HIV (also known as HIV positive) do not have AIDS and may show no symptoms of disease, although most of them will develop AIDS over a period of time. Terms such as "AIDS-infected" should be avoided — it is unclear whether this means someone infected with HIV or ill with AIDS.

Treat with scepticism any claims to have found a cure or vaccine for AIDS

In many countries, physicians, traditional healers or alternative therapists have claimed to have found a cure or vaccine for AIDS. None of these claims has ever been proved, although some treatments have proved effective in relieving some of the symptoms associated with AIDS, such as diarrhoea or thrush.

If you hear of a healer or doctor in your area claiming to have found a cure for AIDS, try not to report it uncritically. Reporting such claims can give false hopes to infected or ill people, and encourage unscrupulous practitioners who stand to make money from these claims. Ask local AIDS support organisations, national or regional AIDS control authorities and respected medical or scientific sources for advice, comment and criticism to include in your articles if you report the claims.

Even minor scientific advances can be magnified by inaccurate, or ill-informed reporting. For example, claims that a new compound "destroys HIV in the test tube" is not sufficient to proclaim it as a potential cure — bleach destroys HIV in a test tube, but it is not usable as a treatment for people with HIV or AIDS.

If vaccine trials are being carried out in your country:

What benefits will your country gain from participation? Are participants voluntary? Are they fully informed and do they fully understand the nature of the research? Are participants also given information on how to avoid HIV infection, for instance by using condoms? Is the strain (or subtype) of HIV the vaccine is designed for the most common in your country? If a successful vaccine is developed, has anything been done to ensure that your country can afford it? Contact your National AIDS Control Programme for information.
A Panos briefing on HIV vaccine trials is available from Panos London (see below for details)

TB and STDs — HIV's dangerous associates

Is investment directed at tuberculosis (TB) prevention programmes in your country? What about the prevention of sexually transmitted diseases (STDs), which increase the risk of contracting HIV?

If AIDS is not considered to be a problem in your country, is any information available on the prevalence of other STDs within the country? HIV is primarily sexually transmitted — if other STDs are present, the conditions which favour the spread of HIV are already there.

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Other Panos publications: Panos distributes a monthly features service for newspapers and magazines, the environment and development magazine *Panoscope* and *WorldAIDS* magazine which reports on AIDS and development. These are available free to newspapers, radio stations and journalists. For more information contact Juliet Heller (press officer), Panos, 9 White Lion Street, London N1 9PD, UK. Panos features are available on electronic mail. The Panos email conference is panos.news located at gn.apc.org. (GreenNet London). Contact David Escolme on panoslondon@gn.apc.org for further information.

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SOME KEY FACTS

HIV spreads from person to person through unprotected sexual intercourse, vaginal or anal, through sharing of contaminated needles or other transfusion equipment, in infected blood, and from mother to child before and during birth and through breastfeeding.

An estimated 19.5 million people have been infected with HIV since the beginning of the pandemic.

Nine-tenths of the world's cases of HIV and AIDS are in developing countries.

It is unlikely that a successful vaccine against HIV will be available in the next 10 years.

There is no cure for HIV or AIDS. The few clinically-tested treatments which are available to help treat people with AIDS are beyond the health budgets of developing countries.

The direct medical cost of treating AIDS is estimated at US$ 32,000 per capita in the United States. In Zambia, it is about US$ 374.

In the North, political commitment to tackling AIDS may be faltering. The next few years will be critical in determining whether AIDS remains high on the world's agenda or whether it is forgotten.

HIV infection dramatically increases the chances of developing tuberculosis disease, from 10% in a lifetime to 8% *per year*.

Sexually transmitted diseases (STDs) enhance the efficiency with which HIV spreads from person to person, partly by increasing inflammation and bleeding in the genital area.

According to a 1990 WHO estimate, there are at least 250 million new cases of STDs worldwide each year. In the developing world, STDs are among the leading causes of disease burden.

AIDS: SCIENCE AT A CROSSROADS

1. THE CHANGING PICTURE

1995: Time to go back to basics

AIDS research is at a crossroads. More has been learnt in a short time about AIDS than about almost any other disease. Yet the unanswered questions are among the most important. For example, why do some people with HIV remain healthy for many years while others rapidly develop disease? Why are effective drugs so elusive? Does the immune system put up an effective defence against the virus at any stage before it is destroyed and, if it does, can it be strengthened? So far, research has focused mainly on trying to find a cure for AIDS, and a vaccine against HIV. Now, scientists are concentrating again on the basic unanswered questions.

In May last year, the late Dr Bernie Fields, a leading molecular US biologist at Harvard Medical School in Boston, wrote in the journal *Nature* that it was time to rethink the strategy to concentrate more on basic science, such as learning how the disease damages the immune system, and less on the narrow pursuit of vaccines and therapies. "The focus on drugs and vaccines made sense a decade ago, but it is time to acknowledge that our best hunches have not paid off and are not likely to do so," he argued.

In the past 12 months, a number of AIDS research organisations have been rethinking their approach. Speaking at the Tenth International Conference on AIDS in Yokohama, Japan, in August 1994, Dr William Paul, an immunologist and the new director of the US government's giant Office of AIDS Research (OAR), said he believed scientists were "at a turning point in the history of the disease".

He believed that "the current inadequacy of treatments for HIV infection and the absence of a vaccine to protect the uninfected are largely due to the wide gaps in our understanding of the [underlying disease process] .... If we do not provide innovative scientists with the resources and opportunities to attack the basic unsolved problems related to AIDS and HIV, we may find that a decade from now, we are no further along in our struggle."

The OAR has overhauled the US National Institutes of Health's entire AIDS research programme — whose budget is US$ 1.3 billion — to devote more resources to basic science and fewer to clinical trials.

This return to basic research is leading some teams of researchers to examine in detail what happens when the virus infects people. For example, Dr David Ho and his colleagues at the Aaron Diamond AIDS Research Center in New York, US, have shown in research published by the scientific journal *Nature* in January this year, that, even when people have no symptoms of disease, the virus in their body is rapidly reproducing itself in large numbers. Each new virus particle stimulates the production of certain vital defence cells known as CD4 T cells. The researchers believe that this creates a rapid turnover of defence cells which then become catastrophically depleted, making the person vulnerable to other infections.

Another example is the renewed interest in an important group of defence cells known as dendritic cells. In separate studies, researchers have analysed the effects of the virus on these cells. Dendritic cells act as "agents of introduction" in the immune system, bringing foreign proteins that enter the body, such as proteins from infectious agents, to meet the other defence cells and stimulating them to respond. As the first line of defence, these cells may be vital in protecting the body from infection. But some researchers have suggested that HIV destroys the normal function of dendritic cells, leading to a domino-like collapse of the rest of the immune system.

Funding under threat

While research into AIDS has reached a turning point, efforts to control and prevent the disease are also facing a crisis — this time for political and economic reasons. In the North, political commitment to tackling AIDS may be faltering. This is despite evidence that preventing HIV infection is among the most cost-effective ways to protect the health of populations (1) and despite the urgency of the problem.

Funds from the rich countries to support AIDS control and prevention programmes in developing countries climbed steeply through the 1980s but began to fall in the early 1990s (2). By 1994, efforts to prevent infection, such as condom promotion, blood screening and education programmes, were estimated to cost US$ 1.5 billion a year worldwide. But only 13% of that sum was spent in developing countries, according to a report by the Rockefeller Foundation (3).

At a world summit on AIDS in December 1994, organised by the French government, the World Health Organization (WHO) and UNESCO, only two countries committed themselves firmly to give new money to support developing countries — France and the UK. In the US, the new Republican-led Congress has again expressed impatience and frustration with the UN system and has stressed its commitment to solving domestic problems rather than international ones. The next few years will be critical in determining whether AIDS remains high on the world's agenda or whether it is forgotten.

Brief history of an epidemic

AIDS was first identified in 1981 when US doctors found a number of homosexual men suffering rare and debilitating diseases which only affect people whose immune system is severely weakened. By 1982, US health officials had labelled the cluster of conditions the acquired immune deficiency syndrome, AIDS. The virus which causes AIDS was identified in 1983 by a French team led by Dr Luc Montagnier and in 1984 by a team led by Dr Robert Gallo at the US National Cancer Institute. It was later named HIV, the human immunodeficiency virus.

Through the early and mid-1980s, research moved rapidly, producing tests to detect antibodies to the virus and establishing the routes by which the virus spread and the extent of the pandemic. HIV was found in Africa, the Americas, Europe, Oceania and Asia. WHO set up its Global Programme on AIDS (GPA) and mobilised governments to start control programmes and prevention activities. By 1987, the first drug against HIV, zidovudine (AZT) had been licensed.

Since 1981, some 4.5 million people have developed AIDS, according to WHO estimates — and this is just the beginning of a wave of AIDS cases that will follow as people who are already infected with HIV become sick.

By the beginning of the 1990s, it was clear that the developing countries were bearing the overwhelming burden of HIV infection and AIDS. Today, WHO estimates that some 90% of HIV infections are taking place within the developing world. Already, more than 11 million of the estimated 18 million infected adults in the world since the beginning of the pandemic are in sub-Saharan Africa. But Africa's epidemic could be outpaced by the explosive spread of the virus in Asia, the most populous continent. There, at least 3 million people are estimated to have been infected already, but the number could reach 10 million within just five years, says WHO, out of a global projected total of 40 million. HIV is already estimated to be the single greatest cause of lost years of healthy life in young adult men in the developing world (1).

2. HIV: A COMPLEX VIRUS

What is HIV?

Of all life forms, HIV belongs to one of the most adaptable and successful, viruses. Viruses are extremely simple, often having only a handful of genes wrapped in a protein coat, but they hijack the machinery of their hosts' cells so that the cells make multiple copies of the viruses. Having replicated in this way, the viruses can go on to infect other cells. This creates a problem for researchers: any antiviral drug which interferes with the reproduction of the virus is also likely to interfere with the normal cell functions, and to cause side-effects in the patient.

Another problem is that HIV is very variable. As the virus reproduces itself in the body of an infected person, it can change rapidly — and can confuse the immune system with its many different variants. Within one individual, a baffling array of different variants may be present after just a few months. Within and between populations, meanwhile, the variation is even greater: different strains, or

subtypes, of the virus are circulating, each of which may look quite different to the immune system. Scientists do not yet know whether a vaccine based on one subtype of HIV will protect against another.

HIV belongs to the group of viruses known as retroviruses. Most life forms have their genetic material stored by the molecule known as DNA (deoxyribonucleic acid) the so-called "blueprint of life". Retroviruses, as well as some viruses, have their genetic material in the form of a different, related molecule known as RNA (ribonucleic acid). But the retroviruses — unlike RNA-based viruses such as measles, influenza or polio — have to convert the RNA into DNA before they can operate inside their hosts cells. They do this with the help of an enzyme (or biological catalyst) called reverse transcriptase.

HIV infects several types of cell in the human immune system — the white blood cells known as "T-helper" or CD4 cells that are involved in orchestrating the immune response, and macrophages, the all-purpose "guzzler" cells that scavenge foreign material. HIV also infects cells in the brain.

How does the virus spread?

HIV is present in detectable amounts in blood, seminal fluid, vaginal and cervical secretions, and breast milk. It has also been detected occasionally in saliva, but there is no evidence that anyone has become infected through kissing alone.

The virus spreads from person to person through unprotected sexual intercourse, vaginal or anal, through sharing of contaminated needles or other transfusion equipment, in infected blood, and from mother to child before and during birth and through breastfeeding. HIV is not spread by normal household contact such as the sharing of eating utensils, bathrooms and toilets, or by coughs or sneezes. Despite persistent fears to the contrary, there is no evidence that mosquitoes, bedbugs or other biting insects can spread HIV.

The 'latent' phase is anything but

In recent years, several teams of researchers have learnt that from the earliest stages of infection, the virus "hides" in the lymph nodes, where it is in close contact with a stream of incoming and outgoing T cells. Gradually, it destroys the immune system.

The greatest public attention to HIV research has focused on work led by Dr Anthony Fauci at the US National Institute of Allergy and Infectious Diseases but others in France, Britain, the Netherlands and Australia had also reached similar conclusions. Together, their findings suggest that there is no real "latent" stage of infection: even while a person appears to be completely healthy, the virus is destroying the architecture of the immune system. Late in the disease process, virus spills out into the bloodstream.

The most recent studies, using the latest techniques of molecular biology, show that there is much more virus present in the body than earlier measurements had indicated. HIV reproduces itself rapidly and the CD4 cells that are mobilised to respond to it fight a losing battle to rebuild their forces.

This period of asymptomatic infection (when a person is infected, and can transmit the virus, but has no external symptoms of illness), can last several years — on average, according to US research, most people who are infected with HIV will develop symptoms within 12 years. This delay may be much shorter in people who are subjected to many other infections and whose nutrition is poor, although there are few studies. Most of the world's estimated 19.5 million people who are infected with HIV are unaware of their condition.

AIDS is a collection of symptoms that develop when the HIV positive person's immune system can no longer defend itself against all the bacteria, viruses and parasites in the environment. It can include weight loss, diarrhoea, tuberculosis and opportunistic infections with a wide range of other organisms, such as *Cryptosporidium*, a parasite that causes diarrhoea, cytomegalovirus, a virus that interacts with HIV and causes eye problems for infected people, Kaposi's sarcoma, a tumour primarily affecting the skin, and *Pneumocystis carinii*, which causes pneumonia. Once a person develops AIDS, they may live for two years or more if they have good treatment, or a year otherwise.

Resisting illness and infection

A small proportion of HIV positive people — perhaps 5% — appear to remain free of any damage to their immune system or symptoms for 15 years or more. The reason for this resistance to illness is unclear — it appears that some of these "long-term survivors" have very efficient immune mechanisms; others seem to be infected with particularly weak strains of HIV.

A small minority of people seem to be able to resist infection with HIV. Teams of researchers have studied people who are exposed to the virus regularly, and appear to be uninfected — for example, a group of gay men in the US practising unprotected anal sex with multiple partners and groups of prostitutes in Kenya and the Gambia who regularly accept clients who refuse condoms. No one knows why the virus has not been detected among these studied groups: it could be that their immune systems are extraordinarily efficient, or that they were exposed to an unusually weak virus which triggered their defences. It is also possible that these people are infected, but that tests have so far failed to detect their infection. The common finding so far is that these lucky few have very strong T cell responses to the virus, suggesting that this is an important component of defence.

3. HIV'S GLOBAL SPREAD

HIV spreads essentially through sexual intercourse. People who have little access to information and limited control over their circumstances are particularly at risk, especially when their sexual behaviour is dictated by economic necessity. People who have other untreated sexually transmitted diseases, which increase the likelihood of HIV transmission during sex, are also at greater risk. The virus has therefore prospered in poor communities, mainly in the developing world, but also in the rich world's deprived inner cities. Low levels of literacy and poor health care contribute to the problem.

Increasingly, as HIV spreads, it brings with it another devastating disease — tuberculosis. One-third of the world's population is estimated to be infected with the TB bacterium but only one in 10 will ever develop the disease under normal conditions. However, it appears that HIV infection dramatically increases the chances of developing TB disease, from 10% in a lifetime to 8% *per year*. As a result, active TB is on the increase in many parts of the world. WHO has declared TB a global health emergency and predicts it will kill 30 million people in the coming decade — some of whom will also be infected with HIV. Currently, an estimated 5.6 million people in the world are dually infected with TB and HIV, according to WHO.

Who is affected?

Worldwide, at least 80% of infections are among heterosexuals. In the industrialised countries, the majority of affected people are gay men and injecting drug users, but heterosexuals are now the fastest-growing group at risk in these countries too. In the developing world women are becoming infected as fast or faster than men. WHO estimates that in Africa, overall, six women now become infected for every four men.

The extent of homosexual activity and infection in many developing countries is unknown but likely to contribute to some degree to the total number of infections. There is evidence that men have sex with men all over the world. Often, they will not define themselves as homosexual or bisexual. Prejudice and legislation against homosexual activity in many countries hampers both the collection of information on men who have sex with men, and the existence of effective prevention directed at them. As a result, in many countries, no data exists on HIV infection and transmission through this route.

But generalised statistics belie the complexity of the global pandemic. It is in fact a string of separate and highly varied epidemics, each influenced by local factors. For example, in Thailand, it appears that one strain (or subtype) of HIV has been predominant among injecting drug users in Bangkok while a very different strain has been circulating among heterosexuals in the north of the country. There is now an overlap between the two mini-epidemics: clearly, injecting drug users also have sex.

On the other side of the world, in Edinburgh, Scotland, a short period of needle-sharing among drug users in the early 1980s appears to have caused an explosive epidemic of HIV whose impact is still

being felt a decade later. In neighbouring Glasgow, the rate of infection among drug users is dramatically lower. The importance of unforeseen local factors in all these mini-epidemics demonstrates the dangers of becoming complacent about the spread of HIV and the patterns of infection around the world.

STDs: a major factor of risk

Even given the complexity of the different mini-epidemics, it is difficult at first to understand why the broad patterns of infection in the industrialised world and the developing countries appear to be so different. Why do so many more heterosexuals have HIV in Africa, Asia, Latin America and the Caribbean than in North America, Australasia and Europe?

One answer is that in developing countries, rates of infection with other sexually transmitted diseases (STDs) such as gonorrhoea, chlamydia, syphilis and chancroid are much higher than in the industrialised countries, and many of these STDs help to fuel HIV's spread. According to a WHO estimate in 1990, there are some 250 million new cases of STDs worldwide every year and, whereas STDs have largely declined in the industrialised world since the 1970s, in developing countries they are among the leading causes of disease burden (1). Estimates of the prevalence of gonorrhoea in pregnant women in developing countries range from 3 to 15%.

Numerous studies have found that STDs help the spread of HIV, partly by increasing inflammation and bleeding in the genital areas and therefore increasing the numbers of cells that can harbour HIV. The effect is to enhance dramatically the efficiency with which HIV spreads from one sexual partner to another. In a population where the rate of partner change is very low and where other STDs are rare, the chance of becoming infected with HIV by a single sex act may be — very roughly — as low as 1 per 1,000. But in groups where the prevalence of STDs is high, such as commercial sex workers, the chance of becoming infected appears to be much higher (2).

Women, once again, are at greatest risk. With most genital infections, it is much easier for a man to infect a woman than for a woman to infect a man. In communities where medical care is difficult to obtain, STDs go neglected, often for months or years. Most STDs are simply and cheaply treated once they have been diagnosed, but women in particular may have no symptoms.

A second answer to the question of why the developing world is so disproportionately affected is that women's social and economic dependence on men makes them particularly vulnerable. Many women are in unequal sexual relationships where they cannot protect themselves. In many communities, they are not expected to discuss sex with men, still less demand safer sex. Women who have no income and no rights to property cannot leave men who may coerce them into sex, and may be forced into commercial sex work to support themselves. Young women are at the greatest risk of all. More than half of all infections in women happen before the age of 24, according to WHO.

4. DESPERATELY SEEKING ANSWERS: HIV'S MYTHS AND MYSTERIES

More than virtually any other disease, AIDS has generated myths and far-fetched theories about its origin, its causes and even its very existence. These are probably linked to fear and denial prompted by a virus which is fatal, infectious, incurable and sexually transmitted — and can infect people for years before they show any signs of illness.

Where did HIV come from (and where is it going)?

HIV is not — despite persistent beliefs — an alien from outer space or an agent of biological warfare. It has close relatives in the animal kingdom. Immunodeficiency viruses are known to infect cats, cattle, and monkeys, for example. The closest relatives of HIV are found in monkeys, and many scientists believe that at some point in recent history, immunodeficiency viruses entered the human population from other primates.

This is not an outlandish idea: many viruses and bacteria "jump" species. For example, influenza viruses are thought to originate in domestic fowl and spread to pigs before they are transmitted to humans. Many virologists have argued that a forerunner of HIV could have "jumped" species from monkeys to humans if blood from a monkey was splashed into a cut or a mucous membrane, such as the eye. In communities where monkey meat is eaten and where monkeys are often kept as pets, this scenario is plausible. Strains of the HIV-related simian immunodeficiency virus (SIV) have been found in macaques, mangabeys, mandrills and vervets. A number of scientists such as Dr Gerald Myers of the Los Alamos National Laboratory HIV Database in New Mexico, US, have discussed the origins of the virus but have not been able to do more than speculate.

There are in fact two distinct human immunodeficiency viruses: HIV-1, which is widespread around the world; and HIV-2, a less virulent form which has been mainly confined to West Africa with a few cases of infection elsewhere. HIV-2 is genetically similar to certain strains of SIV found in captive macaques. HIV-1, however, is genetically distant from SIV and HIV-2. HIV-1's closest relatives have been found in a very small number of chimpanzees from central and West African countries, but the samples of virus from these animals are still being analysed. It seems probable that HIV-1 and HIV-2 "jumped" species separately and have separate ancestors.

But no one knows exactly when either virus first entered the human population. Until recently, scientists believed that they had found the earliest clear, documented case of HIV infection in a British sailor who died in 1959 of a wasting disease and whose stored tissues were reported to be infected with HIV. However, this case is now in serious doubt. Whatever the outcome, there is no evidence of widespread HIV infection before the mid to late 1970s, anywhere in the world.

The most plausible theory is that HIV entered the human population sometime in the past — maybe as recently as the 1970s but certainly within the last 100 years — and then remained isolated in a small or remote group who may not have been severely affected by it. Wherever the virus originated, its explosive spread began only in the 1970s when urbanisation, cheap travel and major international conflict increased the potential for people from different communities to have sex with each other.

There have been claims of an isolated case of HIV infection in 1959 in Kinshasa (then Leopoldville), Zaire. But contrary to popular opinion, there is no evidence of widespread HIV infection in Zaire or anywhere else in sub-Saharan Africa before the mid to late 1970s. Successive testing of stored tissues and blood samples from the 1950s and 1960s has failed to find any HIV infection (4). Claims by Western journalists that AIDS is just a new name for an old disease long prevalent in sub-Saharan Africa have irritated doctors and others in Africa who recognised it as something new and different (5).

Each time the virus makes copies of itself within the cells of an infected person, it makes errors in its genetic material. Over time, therefore, it changes its genetic makeup significantly and develops different variants (see page 3). By 1995, researchers had identified eight broad genetic strains (or subtypes) of HIV-1 around the world, labelled A to H, all of which belong to a group the researchers call "M".

In North America, a strain of HIV called subtype B is prevalent but in other populations, including those of the former Soviet Union, much of sub-Saharan Africa and Brazil, several subtypes coexist (6). There is also a different group known as the "O" group, genetically very different and identified so far only in Gabon, Cameroon and France.

Polio vaccine exonerated

There are many popular alternative theories of the origin of AIDS, including some that are less outlandish than the germ-warfare or space-alien theories. None, however, is supported by evidence. One that seemed plausible at first glance was the suggestion that a monkey virus and forerunner of HIV contaminated the first batches of a polio vaccine that was tested in the Congo and Zaire in the late 1950s. Monkey kidney cells were used to culture the poliovirus used in the vaccine.

However, this theory was effectively discounted by a committee of experts, chaired by Dr David Ho of the Aaron Diamond AIDS Research Center in New York in 1992. There are several reasons why the

vaccine is highly unlikely to be responsible. First, HIV is unlikely to have survived in the kidney cells used to grow the vaccine. Second, the vaccine was given by mouth and HIV rarely survives in the gut. Thirdly, the geography and the epidemiology are wrong: if HIV's forerunner had been transmitted first to humans in the Congo on this scale, researchers would have expected to see an epidemic there first. As has been shown above, there is no evidence of such an epidemic during the 1960s.

In years to come, HIV will presumably continue to mutate. It is possible that either more virulent or less virulent strains could emerge. What seems most certain is that the situation will become even more diverse and complex than it is today.

Is AIDS a myth?

For the past eight years or so, a small but vocal minority in the AIDS research community — and a group of supporting journalists — has argued that HIV is not the cause of AIDS. Led by Dr Peter Duesberg, a virologist at the University of California, Berkeley, the dissidents argue that HIV is just a harmless passenger virus that happens to be found in all the people who get AIDS.

The factors that cause the disease are not HIV at all, they argue, but lifestyle factors, such as use of recreational drugs or having many sexual partners. They claim AIDS can even be caused by the antiviral drugs used to combat HIV, such as AZT. Duesberg and others, such as Dr Robert Root-Bernstein, argue that the evidence linking HIV with AIDS is unconvincing. They believe that AIDS in Africa scarcely exists or has been grossly exaggerated; and they believe that current testing methods are not valid.

Duesberg is a respected virologist and a member of the National Academy of Sciences in the US. A small number of scientists support him, but the overwhelming majority say he is selective with data and ignores the published literature. Nevertheless, his views have been publicised and enthusiastically promoted by some sections of the media, such as the *Sunday Times* in the UK.

The gaps in scientific knowledge about HIV are considerable. There is a need for challenges to the established research community, but the questions that have yet to be answered are not those that Duesberg is asking. Unfortunately, many scientists have preferred to ignore Duesberg rather than take issue with him. This has two damaging effects: it allows him to gain status with the media for being a stifled dissenter; and it diverts public and scientific attention from the real, more demanding unanswered questions about HIV.

The main points made by the "AIDS dissidents" are the following:

- HIV has not been shown to meet the classical requirements, known as Koch's postulates, that must be met if a microbe is to be identified as the direct cause of a disease. Robert Koch, a German microbiologist, discovered the bacillus that causes TB, *Mycobacterium tuberculosis,* in 1882. His work was central in establishing the theory that germs cause disease. To prove that a microbe causes disease, Koch said, it must be isolated from a sick animal, given to a healthy one and seen to cause the same symptoms; then it must be isolated again.

  However, Koch's postulates are in practice difficult to meet with a number of infectious diseases — including, ironically, tuberculosis. In the case of HIV, however, there may now be a near-perfect case, resulting from a disastrous laboratory accident in the US in which three workers were accidentally infected with purified, cloned HIV. In 1993, William Blattner of the National Cancer Institute reported that the three all had falling CD4 counts and one had developed *Pneumocystis carinii* pneumonia. None of the individuals had other risk factors for infection (7).

- Drugs, alcohol, a buildup of stresses on the immune system from contaminated blood products, and too many sexual partners, can all be blamed for destroying the immune system and causing AIDS. But lifestyle appears to be less important than Duesberg believes. Data from several sources suggest that haemophiliac men and gay men infected with HIV tend to develop AIDS at roughly the same rate (8). For the vast majority of people affected by HIV in the developing world, the "lifestyle" factors that Duesberg blames are irrelevant. For most, recreational drugs are not

available. Alcohol abuse is a growing problem among men, but not among women, who are at least as severely affected by HIV as shown above. Few would doubt, however, that malnutrition may accelerate the course of AIDS, as it appears to do in other diseases such as TB.

- AIDS is just a name for old diseases in Africa, such as malaria, TB or malnutrition. HIV is innocent, the dissenters argue. But a study by Ugandan and British-funded researchers, published in *The Lancet* in 1993 (and reported in 1992 at the IXth International Conference on AIDS in Berlin, Germany) showed that people in rural southwest Uganda who were infected with HIV were 60 times more likely to die in young adulthood than people in the same community who were HIV negative, even after potentially confounding factors had been considered.

- AIDS is not linked to HIV, and is not sexually transmitted. The epidemiology of HIV clearly runs against this claim. Within populations, where HIV is found, AIDS is found too. And if the disease were not the result of a sexually transmitted agent, it would not show the pattern of distribution within societies that it does show: it is concentrated largely among sexually active younger adults and, where the virus is prevalent, it is commonest among those who have unprotected sex with large numbers of partners. Claims that the virus is "harmless" are cruel and dangerous, and insulting to those who have been infected.

- AIDS is linked to AZT and its side effects. Most people with AIDS have never been within a mile of AZT. The drug is economically beyond the reach of most people in developing countries. Within the industrialised countries, where AZT has been available to most people with AIDS, controlled trials have shown that the drug has significant side effects, but there has never been any evidence from these trials that it "causes" any of the symptoms of AIDS.

Are HIV tests reliable?

Some dissenters also argue that the existing tests for detecting antibodies to HIV are unreliable. Tests that are relatively affordable and used worldwide are designed to detect the antibodies that the immune system makes to respond to HIV, and not to detect the virus itself. Tests to detect the virus require expensive technology and sophisticated laboratories, and are generally not available in most developing countries.

In the early years of AIDS, some highly-publicised studies found unconvincingly high rates of HIV infection in certain communities in Africa, using the simple antibody test for the virus, known as an enzyme-linked immunosorbent assay (ELISA). The figures quoted were sometimes as high as 60%. It turned out that some of these tests were invalid because of reactions between some of the reagents in the test and antibodies to malaria parasites in people's blood. Later generations of tests have had no such problem.

A more sophisticated test, the so-called Western Blot, has also now come under criticism, most recently in 1993 in the journal *Bio/Technology* by researchers at the University of Western Australia. Western Blot tests consist of bands on a gel that show the presence of antibodies to viral proteins. In trained hands, these tests produce results as accurate as for any other infectious disease. Poorly interpreted, they too could be misleading, however. For example, a Western Blot from an uninfected person may show a single band corresponding to an HIV protein, but in the absence of all the rest, it does not constitute a positive result. Careless or poorly-trained laboratory workers may be reporting occasional false positive results.

But since most people in Africa have no access to laboratory tests for HIV, and many people become ill and die without having been diagnosed, because of the lack of healthcare facilities and medical personnel, the official figures are likely to be underestimates, not overestimates as the dissidents argue.

More importantly, WHO's figures are based on extrapolations from figures for known centres of excellence. Tests carried out in the centres of excellence in sub-Saharan Africa, such as the Uganda Virus Research Institute in Entebbe, are checked from time to time by participating laboratories in the West and their results are as accurate as any industrialised country's (9).

5. VACCINES: WHERE ARE WE NOW?

HIV — a challenge to vaccine designers

The search for a vaccine or vaccines against HIV has proved much more difficult than expected. Vaccines aim to protect people from infection with a particular microbe by stimulating their immune system to make a protective response against it. They do so by presenting the immune system with a "dummy" microbe — either a killed one, or a part of one, or a live but weakened one. But with HIV, there are some fundamental problems.

- First, the virus is highly variable, not just between the different subtypes (see page 3) but also within subtypes and even within infected individuals, each of whom may harbour a "swarm" of diverging variants. A vaccine based on one subtype may or may not provoke an immune response that "recognises" different ones.

- Equally difficult for the vaccine designer, HIV can enter the body hidden inside an infected cell. This puts it effectively out of reach of the immune system. No one knows for sure whether the specific immune response raised by cells in the mucous membranes in sexual organs is crucial for protection, but the question is an important one because most people become infected through the mucous membranes of the genital tract during sexual intercourse, not through the bloodstream during blood transfusion or injection with an infected needle.

- The immune response to infection consists of two broad arms: antibodies, which attach themselves to the virus and block it out of cells; and T cells, which kill infected cells. Most scientists believe that both arms of the system will be needed to protect against HIV. But so far, despite intensive effort, no researchers have been able to pinpoint exactly which parts of the immune response to HIV matter in protecting people from infection. Until they do, some scientists argue, it will be difficult to design a vaccine that works. Others, such as Ronald Desrosiers of Harvard University, disagree: they argue that the history of vaccines has been built on testing vaccines that may not be understood at all, but which have been found through empirical research to work (8).

- Another problem is the lack of a good "animal model". Scientists usually study an infection and the effect of an experimental vaccine in animals, such as mice and monkeys, that can be infected and develop similar or comparable symptoms to humans. The animal can be vaccinated and deliberately exposed to infection to find out whether the vaccine works. In the case of HIV, however, the best model is the macaque, infected with the simian immunodeficiency virus (SIV). Chimpanzees can be infected with HIV-1, but because they are an intelligent, endangered and protected species, in short supply and prohibitively expensive, scientists are reluctant to use them.

Who will foot the bill?

And, as if the scientific difficulties were not great enough there is another, equally pressing economic problem. In the 1980s, pharmaceutical and biotechnology companies were enthusiastic about developing HIV vaccines. Even so, estimates in a report by the Rockefeller Foundation (3) suggest that the total private sector expenditure on HIV vaccine research in 1993 was around US$ 25 million. The public sector, overwhelmingly the US government, spent US$ 135 million. Now that it is clear that the vast majority of infections are in the developing world, where few people or governments can afford to buy vaccines at market price, the motivation for the private sector is reduced — particularly since the US announced that it had postponed any large-scale domestic field trials of HIV vaccines.

Vaccine trials also pose a number of essential ethical questions. For instance, according to ethical guidelines on vaccine testing, participants to a trial must be volunteers; they must also be able to understand the nature of the research involved and any possible risks and effects associated with it. Because many of the issues linked to HIV vaccines are very complex, this is difficult to establish. For ethical reasons, people who participate in vaccine trials must also be counselled on how to avoid infection and to protect themselves. This may in turn reduce the number of people who become infected, and make it more difficult for researchers to judge how well the vaccine works, but it would

be unethical not to counsel people in this way. Another problem is that participating in a vaccine trial might make people feel that they are protected — and encourage them to practise behaviour which increases their HIV risk.

Nevertheless, concerned scientists in both the public and private sectors are now working to establish a new global initiative to accelerate the development of vaccines that the world can afford. The Rockefeller Foundation report suggests that the initiative would require collaboration between the public and private sectors and could be modelled on a number of different existing mechanisms such as the International Task Force on Hepatitis B Immunization or the Children's Vaccine Initiative. It should also focus on developing vaccines based on subtypes of the virus that are found worldwide, such as A, E, C and D, and not on subtype B, which has dominated the epidemic in the US but which will become increasingly less important in the global picture.

How researchers are tackling the issue

So far, more than a dozen candidate vaccines have been tested in small groups of people, mainly in the US and Europe, to establish whether they are safe and to find out what sort of immune response they provoke — two essential steps which have to be completed before a vaccine can be tested for its capacity to prevent infection. Most of these vaccines are based on genetically engineered forms of HIV's protein coat gp120. All but one have been based exclusively on subtype B.

Two vaccines made by US companies have been tested in large-scale safety trials. So far, however, there have been no trials to test whether the vaccine can actually protect people from infection, but trials are due to begin next year on these vaccines. To establish whether a vaccine can protect people from infection, researchers will have to vaccinate a large number of people at high risk of infection, half with vaccine and half with a "dummy" vaccine or placebo, and then compare the numbers that become infected in each group. If the group that received the real vaccine has significantly fewer infections than the placebo group, the vaccine will be judged to have given some protection.

In the meantime, the effects of these vaccines have been measured in laboratory studies where blood samples from vaccinated people are mixed with virus to see whether the vaccine stimulates antibodies and T cells and whether these can combat the virus. Overall, most of these vaccines stimulate antibodies against the virus and a few stimulate T cells, but in no case does the response last for long or at any great strength. It is not clear how much protection these vaccines would offer.

An important development in the 1990s has been the discovery by Dr Ronald Desrosiers, at Harvard University, of a very different approach based on a live, but genetically altered virus. Desrosiers found that a vaccine based on a live form of SIV can protect macaques from infection with the wild virus. The altered form of SIV used in the vaccine had had certain pieces of genetic material removed and failed to cause disease in the monkeys.

However, there are major safety concerns. No one knows whether a live but weakened and "disarmed" virus could regain its strength and its weaponry, through gene mutation or through recombining with the natural virus. Other researchers have found that deleted pieces of genetic material in SIV can "rebuild" themselves, raising the possibility, however remote, that the vaccine virus could revert to normal and cause disease. Elsewhere, researchers discovered that infant macaques born to the vaccinated animals developed disease.

Taken together, these concerns are likely to make authorities such as the US Food and Drug Administration highly nervous of even considering authorising tests in people. Nevertheless, scientists argue that where the risk of HIV infection is very high, the relative risk of complications from the vaccine may be a risk worth taking. Following a meeting at WHO in Geneva in October 1994, Dr Edward Mbidde, head of Uganda's National AIDS Committee, said the Western nations "had not seen the epidemic" and that its pace and scale in his country demanded action.

A WHO expert committee argued in June 1993 that a highly effective vaccine with a risk of serious adverse reaction of 1 in 100,000 might be preferable to the risk of infection in some communities, or preferable to the risk that a less effective vaccine might fail. In some populations, such as users of

certain STD clinics, or young adults in high-incidence districts, something like 1 in 25 is becoming infected each year.

Vaccine trials: not for the faint-hearted

Back in 1991, a number of countries with high levels of HIV infection declared their intention to prepare for field trials of HIV vaccines. WHO selected four to whom it would give support in assessing the protocols for trials and helping to develop the infrastructure and train personnel. They were: Brazil, Rwanda, Thailand and Uganda. WHO said that trials would be undertaken only with the authority of the sovereign state and only after the candidate vaccine had been field-tested first in its country of origin.

Since then, much has changed. In 1994, the US decided to postpone indefinitely its own, domestic large-scale trials of the two most extensively developed HIV vaccines, leaving the developing countries on their own. The reason given for postponing the trials in the US was that there was insufficient evidence that these vaccines would protect people to justify large, costly trials now. However, US health officials stressed that other countries with higher incidences of HIV might take a different view.

At the October 1994 WHO meeting, an expert group representing scientists, public health officials, activists and the private sector from Thailand, Brazil and Uganda and from the North concluded that trials could go ahead elsewhere provided the sovereign state authorised them. The expert group said that the pace of the epidemic in these countries meant that even a modest protective effect might be better than nothing.

The first trials are now beginning in Bangkok, Thailand — aimed initially at confirming the safety and immunogenicity of the vaccine. Tests of whether the vaccine actually protects will begin about a year from now. However, the trials are beset even now with controversy. The pattern of subtypes in Thailand is changing rapidly and some scientists argue that the Genentech vaccine to be used in the trial — which is based on subtype B — is inappropriate in a population where both subtypes B and subtype E are prevalent, but where subtype E is gaining the upper hand. Others defend the trial, saying that until it is done no one will know whether a vaccine based on one subtype will protect against infection with another.

The question is important, not just for Bangkok, but for others in different countries and continents. At present there is virtually no effort going into developing vaccines based on subtypes prevalent in Africa, such as A and D. Uganda is unlikely to start a trial until an appropriate vaccine has been developed, or until there is evidence that a B-based vaccine could protect against other subtypes. Rwanda's AIDS research programme has been destroyed in the violent conflicts of 1994. Meanwhile Zaire, which had planned vaccine trials not directly with WHO, but with the US government, has also lost its AIDS research programme because of civil unrest.

The real prospects for a global HIV vaccine are limited at present. First of all, it is unlikely that a successful vaccine will be available in the next 10 years. And, apart from all the scientific problems, there has been little practical focus on the needs of the developing world. There is no estimate at present of how much a vaccine might cost, but it would almost certainly be too expensive for developing countries without some subsidy or other incentive from the public sector that would allow the private sector to recoup research costs. A number of such schemes have been discussed by the pharmaceutical companies and the international health organisations. So far no clear agreements have been reached.

6. DRUG TREATMENTS: WHAT'S IN THE CUPBOARD?

There is no cure for AIDS, but a number of treatments have been developed to help deal with the various opportunistic infections which people with HIV and AIDS may contract, and to try and delay the onset of AIDS.

Orthodox therapies

The existing treatments for HIV infection and the symptoms of AIDS have benefited patients in the rich world but have scarcely touched the developing countries. Mainly because of good treatments for opportunistic infections such as cytomegalovirus or *Pneumocystis carinii*, people in the North can now expect to live for about two years after AIDS has been diagnosed — twice as long as in the early 1980s.

In the South, the available data suggest the survival is much shorter. Doctors in the South are frustrated by the lack of basic antibiotics and antifungals they need to treat these opportunistic infections. But with total annual health budgets per capita of as little as US$ 13.5 on average in sub-Saharan Africa, even these cheap drugs are out of reach. The antiviral drugs that attack HIV itself, such as zidovudine (AZT) are out of the question: one day's supply for someone with AIDS costs about US$ 15.

So far, approaches to the direct treatment of HIV have focused on either attacking the virus, by designing antiviral drugs or boosting the immune system against it. In addition, there is a wide range of drugs to treat opportunistic infections such as tuberculosis.

The earliest type of antivirals are known as nucleoside analogues: they include zidovudine (AZT), ddI, ddC, 3TC, stavudine and FLT. All these drugs work in the same way: they mimic the protein building blocks (nucleosides) in a cell and stop the virus from assembling its genetic material. When HIV replicates, it has to turn its genetic material from RNA into DNA, which it does with the help of its enzyme reverse transcriptase. The enzyme builds up the chain of building blocks in DNA by assembling nucleosides from the cell. The "false" nucleosides generated by the drug join into the chain and stop further real nucleosides from being added, like a broken bead in a necklace.

Trials of AZT show that it can benefit people with AIDS for a limited period by slowing down the process of disease. However, its benefits are short-lived; people who start taking it when they have HIV infection but no symptoms will tend to develop AIDS as soon as they would have done if they had not taken the drug. Unfortunately, the drug can also have significant side effects including anaemia and muscle wasting. Nevertheless, a study from the US National Institute of Allergy and Infectious Diseases showed in early 1994 that the drug could cut by two-thirds the number of infections passed from mothers to their unborn children. Encouraging though this is, most pregnant women with HIV in the world have no hope of obtaining AZT. And the long-term effects of the drug, if any, on a foetus are unknown.

Other antivirals include protease inhibitors, which work by inhibiting protease, an essential viral enzyme enabling HIV to reassemble new copies of itself, by chopping up large proteins into smaller ones. Saquinavir, one of several protease inhibitors on trial, has produced some encouraging results on its own and in combination with other antivirals (10).

The main problem with antivirals of all types is that HIV rapidly develops resistance to them. Researchers hope that combinations of different antivirals will help to lengthen healthy life and reduce the opportunities for drug-resistant strains to emerge. However, there are few data as yet to either support or destroy their hopes.

Rather than attack the virus directly, some treatments are designed to reinforce defences against it by boosting the immune system. They include so-called therapeutic vaccines, in which an already infected person receives an injection of genetically engineered envelope protein. The aim of a therapeutic vaccine is to trigger a new immune response in the infected person, in the hope that it might strengthen the natural immune response against the virus. Despite bullish early claims, the effects of these therapeutic vaccines is unclear.

Another approach is to give HIV-infected people infusions of purified human "messenger chemicals", or cytokines, which may modify their immune response to the virus.

Alternative therapies

A serious handicap faced by AIDS educators throughout the world is the growth of claims made by alternative or traditional healers that they have found a cure for AIDS. None of these claims has ever been substantiated.
Given the paucity of good conventional therapies it is not surprising that a large number of people with HIV have tried various alternative and complementary medicines and therapies. These range from vitamin supplements and other simple dietary measures to crystal therapies and astrology. The lack of research on most of these makes it difficult to present clear conclusions. Nevertheless, many individuals say they have been helped by such therapies. As with all medicines, herbal medicines may have toxic side effects and in addition, herbal medicines may contain toxic impurities. Because the alternative medicine industry is less closely regulated than the conventional pharmaceuticals industry, patients are obliged to check their practitioners' credentials as closely as possible (11), (2).

While there is evidence that some alternative therapies can provide relief from some AIDS-associated symptoms and infections, claims that alternative or traditional treatments can cure AIDS must be treated with extreme caution and scepticism. So far, none of the claimed "AIDS cures" has ever been proved to work, and some practitioners have exploited the fears and weaknesses of their patients unscrupulously.

However, particularly in developing countries where conventional modern medicine requires expensive imported drugs to treat HIV- and AIDS-related symptoms, traditional herbal remedies can offer a much cheaper alternative. In many parts of the developing world, traditional healers are the first port of call for many ill people — a survey carried out a few years ago by the Zimbabwe Traditional Healers' Association found that 80% of Zimbabweans consult a traditional healer at some point, and 30-40% of all patients go to a traditional healer first.

Since the 1980s, pharmaceutical companies have been investigating plants used by traditional societies as potential sources for new drugs and treatments. According to *The Lancet*, fewer than 10% of the world's estimated quarter of a million flowering plant species have been scientifically examined for their medicinal potential (12).

The following alternative therapies have been used to treat patients with AIDS:

- Homeopathy: some homeopaths claim success in treating specific symptoms of AIDS, such as night sweats or weight loss. Some have also treated emotional symptoms linked with the disease such as shock, depression and anxiety. Evidence is hard to obtain, however, since homeopathy is difficult to test using the randomised controlled trials that are favoured by conventional modern medicine. This is because homeopathic treatments are tailored to individuals, whereas clinical trials depend on giving large numbers of people the same treatment.

- Special diets: some, such as anti-candida (a fungal infection commonly know as thrush, which many people with AIDS are prone to) diets, are designed to reduce the risk of opportunistic infections in immunocompromised people. Others, such as macrobiotic diets, are part of a strategy to increase the individual's wellbeing, health and boost the immune system.

- Physical therapies such as osteopathy, hydrotherapy, chiropractic manipulation and massage can be used together with alternative or conventional medicine.

- Chinese herbal medicine: In marked contrast to other alternatives to Western medicine, traditional Chinese medicine has been at least partly researched. Chinese tradition considers that microbes cause disease in the body only when its life force is depleted. Most Chinese remedies tested against HIV appear to increase the resistance of the cells of the immune system rather than attack the virus itself. Some increase antibody levels, many are reported to increase T cell levels. More than 30 products have been tested in animals and in healthy human volunteers.

The most important Chinese herb in HIV disease, and the most extensively studied, is astralagus. It increases the production of antibodies in healthy humans and stimulates several factors in the immune system in mice. Many Chinese herbalists have prescribed it as part of an immune-stimulating compound for HIV-positive people.

Other important Chinese herbs used to treat HIV include: *Andrographis paniculata* — which is used to treat TB, and inhibits HIV in the test tube; *Hypericum performatum* (in synthetic form, hypericin), which is used to treat Hepatitis B virus infection in China and inhibits HIV in the test tube; and *Viola yeodensitis*, which inhibits, but does not kill, HIV. Doctors in San Francisco are currently testing a Chinese herbal formula in people with HIV. A short-term collaborative study in Tanzania between Chinese practitioners and Tanzanian doctors suggested that symptoms were relieved in most of a small number of cases. However, long-term health was not reported (11).

- Other herbal treatments: In many developing countries where traditional medicine is still practised, traditional herbalists have tried various approaches to treat AIDS or associated illnesses. In Zimbabwe, after a spate of spurious AIDS cure claims by traditional healers, limited trials were carried out by the Blair Research Laboratory on herbal cures from traditional healers. These trials showed that some herbal preparations can be effective in alleviating some of the symptoms linked with AIDS, such as diarrhoea and weight loss. However, none of the compounds tested could cure AIDS or rid the body of HIV.

A study conducted in Kigali, Rwanda (before the recent conflict) and in Kampala, Uganda, found that most women were using both traditional healers and modern medicine to treat AIDS and other diseases. The study also found that traditional healers were usually interested in collaborating with modern medical practitioners, and that all the healers questioned knew the symptoms of AIDS and the routes of transmission of HIV (13). There is also evidence that in many countries, traditional healers can sometimes help people with HIV or AIDS by providing psychological support and counselling.

- Acupuncture, another Chinese traditional therapy, can benefit people with AIDS, both in long-term programmes and in hospices for those receiving terminal care.

The cost of AIDS treatments

AIDS is expensive. The direct medical cost of treating the disease has been assessed in a number of different countries (14). In the developing countries, on average, it is roughly equal to per capita GNP. In the rich countries, it often exceeds per capita GNP. For example in the US, in 1991, the cost of treating each AIDS patients was estimated at US$ 32,000 a year — or 161% of GNP per capita. In Zambia, the cost was US$ 374, or 96% of GNP. And in Zaire, the cost varied dramatically between US$ 132 and US$ 1,585 — which translates into anything between 78% and a staggering 932% of GNP (2).

In much of sub-Saharan Africa, care provided at home in a person's village may be extremely cheap while hospital care in a major city will be 50 times as expensive — and this is without antivirals.

The World Bank reported in 1993 that even in Tanzania, where the government pays a large share of health costs, affected households had spent on average a crippling US$ 60 — equivalent to a year's rural income — on treatment and funerals (1). In Thailand, a small study in Bangkok in 1990 found that the total direct cost of diagnostics and drug treatments was just over US$ 1,300. Some 80% of that was for drugs; AZT alone accounted for two-thirds of the total drug costs (2). But in most developing countries, AZT is not even an option. In Malawi in 1994, the estimated cost of treating AIDS patients without any expensive antivirals, but just routine drugs such as aspirin, was estimated to be US$ 20 million. This was expected to more than treble by 1998.

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ORGANISATIONS

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The Global AIDS Policy Coalition, 5th floor, 8 Story St, Cambridge, MA 02138, USA. Tel: 1 617 496 4370

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MATERIAL ON HIV/AIDS

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Personal paper

Practising obstetrics and gynaecology in areas with a high prevalence of HIV infection

Douwe A A Verkuyl

What is it like to practise obstetrics and gynaecology in a country with a high prevalence of HIV infection? My experience relates especially to Zimbabwe, but the same factors apply equally well to Zambia, Zaire, Uganda, Kenya, Tanzania, Malawi, and Mozambique.

Within a population of 11 million in Zimbabwe, at least 1 million are HIV positive according to the official figures. AIDS often means "home-based care"; the nearest clinic or hospital, which has very little to offer, may be 3 hours away by wheelbarrow. Many patients who die with chronic diarrhoea lack a piped water supply nearby, an indoor toilet, or even a waterproof sheet. Every year in Zimbabwe there are 120 000 confinements of HIV-positive women compared with 7000 HIV-positive pregnancies in the USA.[1] Transmission of the virus in Africa is mainly heterosexual and vertical, although blood transfusion still plays a part. Intravenous drug use is not a problem but alcohol is, by way of promoting risky behaviour. A secondary epidemic of tuberculosis (TB) (also among HIV-negative persons) adds to the difficulties in sub-Saharan Africa.

Testing

Patients seldom request an HIV test, and many blood donors have stopped volunteering because they do not want to know. Testing is done, in some cases without the patient's knowledge, in cases of severe illness and in specific situations when knowledge of the HIV status influences management or increases understanding of the HIV disease. Although an infected individual might benefit from knowing that the test is positive, most patients have little control over their lives and cannot make plans for the future. Counselling, a magic imported word, does not work well where people are less individual and more components of an extended family, which nevertheless could eject the individual should it come to know about her HIV status.

Moreover, the health services could never cope with basic preventive care if it made a serious effort to track down HIV-positive patients. If a woman is tested and found positive should one send for the husband and offer him a test? 12 partners of the 146 women identified as HIV positive in one study from Rwanda refused testing, and 10 (7·5%) of the tested were found to be HIV negative.[2] Within couples, HIV negativity in the man and positivity in the woman occurs especially if both partners are young. Will he abandon his wife and children and tell everybody why? She will need a new provider. Perhaps he will turn to another woman and become infected anyway? I know of "counsellors" who will not tell the husband that he is negative.

There are severe difficulties related to the diagnosis and management of infertility. Gynaecologists often test for HIV before embarking on any investigations. But how should we tell a woman that infertility is one of her least problems? Many couples stay together if found to be HIV positive, but the additional burden of infertility may be intolerable. In Zimbabwean culture it is better to have had a baby even if the child died than never to have had a child.

A widely held belief among nursing staff is that patients who are told that they are HIV positive give up and die much faster than those who remain ignorant of their condition. Should patients be offered a test when HIV infection is suspected but the HIV status has no bearing on management—eg, in cases of herpes zoster, large condylomata acuminata, or Bell's palsy in the third trimester of a pregnancy? Although offering a test sounds fair and democratic, the patient cannot then choose not to know that her herpes is likely to be HIV related. Should she communicate the doctor's suggestion to her relations and risk rejection, or harbour her fears alone? When I recently did a survey in the United Bulawayo Hospitals in Zimbabwe, 10% of 250 gynaecological outpatients indicated that they did not want the doctor to communicate his or her suspicion that HIV was involved if there were no therapeutic implications. I suggest that all patients at presentation at a health facility should be asked to indicate on a form whether they wish to be tested should the above situation arise.

Gynaecology

In gynaecological practice post-abortal sepsis, severe pelvic inflammatory disease, pelvic lymphadenitis, vulvo-vaginitis (often ulcerative), and tuberculous peritonitis are

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increasing. Some patients present with chronic vaginal bleeding and are found to have HIV-related thrombocytopenia.[3] Amenorrhoea and infertility related to weight loss are more common. Recto-vaginal fistulae in sexually active women,[4] unrelated to labour or trauma, and in under-fives[5,6] are new. Conventional repairs of labour-related vesico-vaginal fistulae in HIV-positive patients and of the above-mentioned recto-vaginal fistulae are often unsuccessful. There is an increase in the incidence and progression of cervical (pre)malignancies and timely detection and treatment becomes more difficult and time consuming, making much discussed national cervical screening programmes even more remote.[7]

Obstetrics

Pregnant women in Africa are not screened for HIV, for financial, psychological, and practical reasons. The latest government sentinel surveys of antenatal clinics in Zimbabwe put the average prevalence of HIV infection at 24% in apparently healthy women. About 28% of the babies of infected mothers become infected in utero, 8% before and 20% during labour.[8,9]

Breastfeeding, according to a meta-analysis, is responsible for another 14% of vertical transmission in established HIV infection.[10] Thus about 42% of the babies of infected mothers who breast feed become infected before, during, or after labour. 14% (58% of 24%) of all mother/baby pairs will therefore be discordant at the time of weaning. These babies are at risk of becoming infected over and above the "natural" infection rate. The routine practices of health workers are worrying in this light. Take a typical example of a newborn baby, its face full of blood: although it is crying vigorously, the midwife pushes the blood up the baby's nose with a suction catheter. The dangers are obvious and the practice is unnecessary. The natural history of vertically acquired HIV infection is not yet clear in the developed world let alone in Africa. One study from Rwanda[11] found that 19% of the babies of HIV-positive mothers had died of disease 2 years after delivery; this result supports the widespread impression that survival time is shorter in Africa.

How to care for perinatal patients potentially infected with HIV is not made explicit in nurse/midwife training facilities or in medical schools. Moreover, provision of humanised milk for bottle feeding is out of the question. Humanised milk costs 200 Zimbabwe dollars a month (approx US$25). The minimum wage in Zimbabwe is Z$150 and the annual health budget is Z$90 per person. If antenatal testing was offered, nearly one third of the health budget would be needed if all HIV-positive mothers were to be provided with humanised milk for a year. Apart from that, bottle feeding would automatically stigmatise mothers, and there would be many unwanted pregnancies because of loss of the contraceptive effect of breastfeeding. Every child, infected or not, is a potential responsibility for the community since the extended family—the social security system of Africa—is collapsing under the exponential increase in orphans.

There is also an increase in puerperal sepsis, massive condylomata acuminata, and fever related to TB or of unknown origin, often combined with wasting and maternal and perinatal mortality. Most of the infections are the usual type of postpartum or post caesarean complications, only more severe and more frequent. Unusual infections are also encountered—eg, peritonitis after a routine postpartum tubal ligation or pubic osteomyelitis after spontaneous labour. A new feature is retention of urine caused by HIV-related damage to the nervous system. It is difficult to differentiate clinically between puerperal psychosis, cerebral malaria, and HIV-related cerebral complications such as toxoplasmosis, cytomegalovirus infection, and lymphoma, to name a few.

Suggested changes in obstetric practice

Blood transfusions should be given only when thought to be life saving; old habits in this area die very slowly. Protocols developed to prevent exchange of blood from a low-pressure system (the fetus) to a high-pressure system (the mother) in potential rhesus sensitisation are applicable in potential HIV infection up to the moment that the cord is clamped. External cephalic version and amniocentesis should be avoided, and the cord should be clamped as early as possible. The longer a baby is protected in labour from direct contact with the mother's blood and secretions the better. Artificial rupture of the membranes and episiotomies should be done at the last moment or better still avoided. Fetal scalp electrodes and blood collection from the baby's head are contraindicated until the technique has been adapted to make it safe. If the membranes have ruptured, exposure time to maternal secretions could be shortened by use of oxytocin.

Instrumental deliveries should be done carefully and preferably with rubber cup vacuum extractors to prevent abrasions of the fetal head.[12] Washing of the vagina with chlorhexidine before an instrumental delivery or during any labour with ruptured membranes should be studied. Babies should be rinsed immediately after delivery. Extra caution is required for caesarean sections. The scalpel should not be used for the full thickness; instead the last part should be opened bluntly with the tip of the finger in order not to nick the baby. The operative technique should be modified to ensure that the baby has very little contact with the mother's blood. To decrease the vertical transmission rate by doing caesarean sections on all known HIV-positive women is not feasible, and use of zidovudine to prevent vertical infection antepartum and during labour is too expensive. Careful wiping of the baby's face instead of suction should be enough in most situations. The cord clamp should not crush the cord in the presence of maternal blood.

Some treatment protocols will have to be changed. It seems prudent to continue long-acting penicillin injections in a pregnant woman with any evidence of syphilis from the time of diagnosis until delivery, to prevent congenital syphilis, if she is not proven HIV negative. This approach is necessary because definitive treatment of syphilis- is difficult in HIV-infected individuals[13] and because there is a strong correlation between the two infections. A study from Malawi[14] showed that 71·7% of male patients with positive syphilis serology were HIV positive. Babies of mothers with syphilis who have been treated routinely during pregnancy will still need a course of penicillin after birth. Cervical cerclage is contraindicated if patient and partner are not known to be HIV negative.

Family planning

If one partner is potentially HIV positive, use of condoms is sensible. To prevent induced abortions, especially because they are mostly illegal and therefore dangerous, the "double Dutch" method (condom plus hormonal

contraception) is advocated. Few women have the power to make their partners use condoms. If a pregnancy is contemplated the logical thing would be for both partners to have themselves tested for HIV first. Such a strategy looks good on paper but only the rich are able to organise testing for themselves.

Availability of good reliable contraceptives and the relevant education is important in countries where there will be many orphans. There is considerable confusion about the effect of different contraceptives on the infectiousness of and susceptibility to HIV.[15–17] Condoms (female as well as male) are protective. Use of an intrauterine contraceptive device (IUCD) is irrational if HIV infection has not been excluded in both partners. Severe peritonitis in association with an IUCD is seen more often in patients with HIV infection. Other foreign bodies such as those used for osteosynthesis also become frequently infected.[3] The situation in relation to hormonal contraception is unclear. Factors such as less bleeding (the combined pill and depot medroxyprogesterone acetate [DMPA]), more frequent bleeding (progestagen-only pill and DMPA), more ectropion (combined pill), less ectropion (DMPA, Norplant, progestagen-only pill), prevention of other sexually transmitted diseases, and less motivation to use a barrier method if a hormonal method is already being used are important. There is no evidence of an HIV-related increase in infection of the injection or implantation site of DMPA or Norplant.

Patients known to be HIV positive who want to use contraception need a reliable method. Studies[18,19] and personal surveys indicate that in Zimbabwe, often mentioned as an example to other African countries in relation to family planning, nearly half the pregnancies are unwanted and/or mistakes, and 20–40% of pregnancies are conceived while combined oral contraceptives or progestagen-only pills are being used or have just been stopped (because of side-effects or unavailability). Drugs that affect the reliability of oral contraceptives are commonly used in HIV-positive patients, who often have diarrhoea too. Under these circumstances, sterilisation is probably the method of choice in patients with children. To recommend sterilisation for a man or woman without living children seems very cruel, especially when we do not know for certain that a cure for AIDS will not be available before he or she dies or even whether the disease might be self-limiting. Injections, or better still implants (because there is no need to worry about contraceptives being out of stock for the next five years), seem the best choice. Unfortunately donors such as USAID do not facilitate the procurement of Norplant because of the cost, and political developments in the USA promise no improvement. By far the majority of patients are too poor to pay US$12 for Norplant. Studies on non-barrier contraceptives and HIV show that their potential effect on horizontal transmission is of a far smaller magnitude than that of vertical infections prevented, if a reliable contraceptive is used. Therefore oral contraceptives should lose their market domination for at-risk groups for HIV infection and pill failure. As it happens, these groups are often identical.

What about abortion? In Zimbabwe there is a heated discussion about the legality of pregnancy termination in known HIV-positive women. Most of those who request help—about a hundred a year—have already lost one child and sometimes two to AIDS. Adoption, which is difficult because of cultural beliefs, becomes even more difficult if a parent died of AIDS. The estimate is that five years from now there will be 9 million AIDS orphans in sub-Saharan Africa.[20] Doctors and nurses involved in the terminal care of HIV-positive babies are often blamed for not having tried to prevent subsequent pregnancies in the mothers. But imagine how hard it is to offer contraceptives to a mother who is losing her child from a vertical infection. Nevertheless, the last illness of her child will probably be the last contact this woman will have for a long time with a health worker who knows about her HIV status.

Adolescents have an impossible task to find condoms in the rural areas where 80–90% of them live. Community-based distributors mainly responsible for contraceptive pills and condoms in such areas do not cater for unmarried individuals. A rural or small-town boy, let alone girl, could rarely obtain a condom without the whole community talking about it. This problem needs urgent attention since up to 30%[21] of 15–19-year-old pregnant girls are HIV positive. Possible strategies include provision of condom-dispensing machines in bars, and perhaps in schools and mission and health facilities, and making the selling of condoms at cost price a condition for obtaining a liquor or petrol licence. Community leaders should also ensure that sex can be discussed openly, and exert their influence by example and education.

Doctors have their own problems and private risks like everybody else and they lose colleagues and acquire extra family responsibilities. Professionally it is difficult to keep up morale when there are tragedies all around and to see the improvements in health indicators of a few years ago wiped out. Needle accidents are more than a 100 times riskier than in most of the first world where they are already cause for serious discussion. Tinkering with your car or even playing sport becomes dangerous because a resulting abrasion might be splashed by blood during the next breech delivery or soaked via a small puncture in a (re-sterilised) glove.

Detecting a fungal infection between your toes, an infected mosquito bite, or an aphthous ulcer in your mouth brings on a cold sweat—and empathy with patients who do not want to be tested.

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SAYING NO TO SEX

FACTS FOR TEENAGERS 1

ENGLISH

FOREWORD:

A significant number of Namibia's women have their first baby when they are around 16 years old. Many Namibian adolescents are having sex even though the beliefs and traditions of their society are against it.

To find out what makes these adolescents have sex, we asked Namibian teenagers to identify factors they felt were responsible for their sexual behaviour. Of all the reasons given, most deal with 1 basic problem: a lack of knowledge of sex and the normal, natural sexuality of young, developing adults.

Some teenagers feel adults don't understand them, some adults are afraid that to discuss sex openly might encourage their children to have sex. Often children think that there is no adult they feel comfortable to discuss sex with.

The Ministry of Health and Social Services has no intention whatsoever that this book should replace the roles of families, churches, schools or communities in guidance or education. Our task in this book is an attempt to provide facts and answers which could assist teenagers to cope with a demanding changing world.

S Amadhila

Dr. S. Amadhila
PERMANENT SECRETARY

March, 1994

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Translations: NANSO students, Gamsberg MacMillan, Nyae Nyae Development Foundation

Based in part on a study on Teenage Pregnancy (1993) by P. Hailonga for this Minsitry

TEENAGERS

Being a teenager is a very special time in your life. You are leaving your childhood behind and stand at the doorway of adulthood. You are now old enough to make decisions which will affect the rest of your life, and often no parent or other adult will be there to guide you.

One of these decisions is ***SEX***. Your body reaches adulthood first, producing chemicals or hormones which give you wierd new physical and emotional feelings. You are now more aware of the physical differences between guys and girls, of attraction and a need for closer, more intimate contact. When near someone you "like", your hands sweat, you can't concentrate or think clearly. You feel confused and unsure of yourself.

Does this sound familiar? Don't worry, its quite natural. This is your new sexuality, a natural part of growing up. Your body is telling you: "Go for it, you're old enough. Sex feels good".

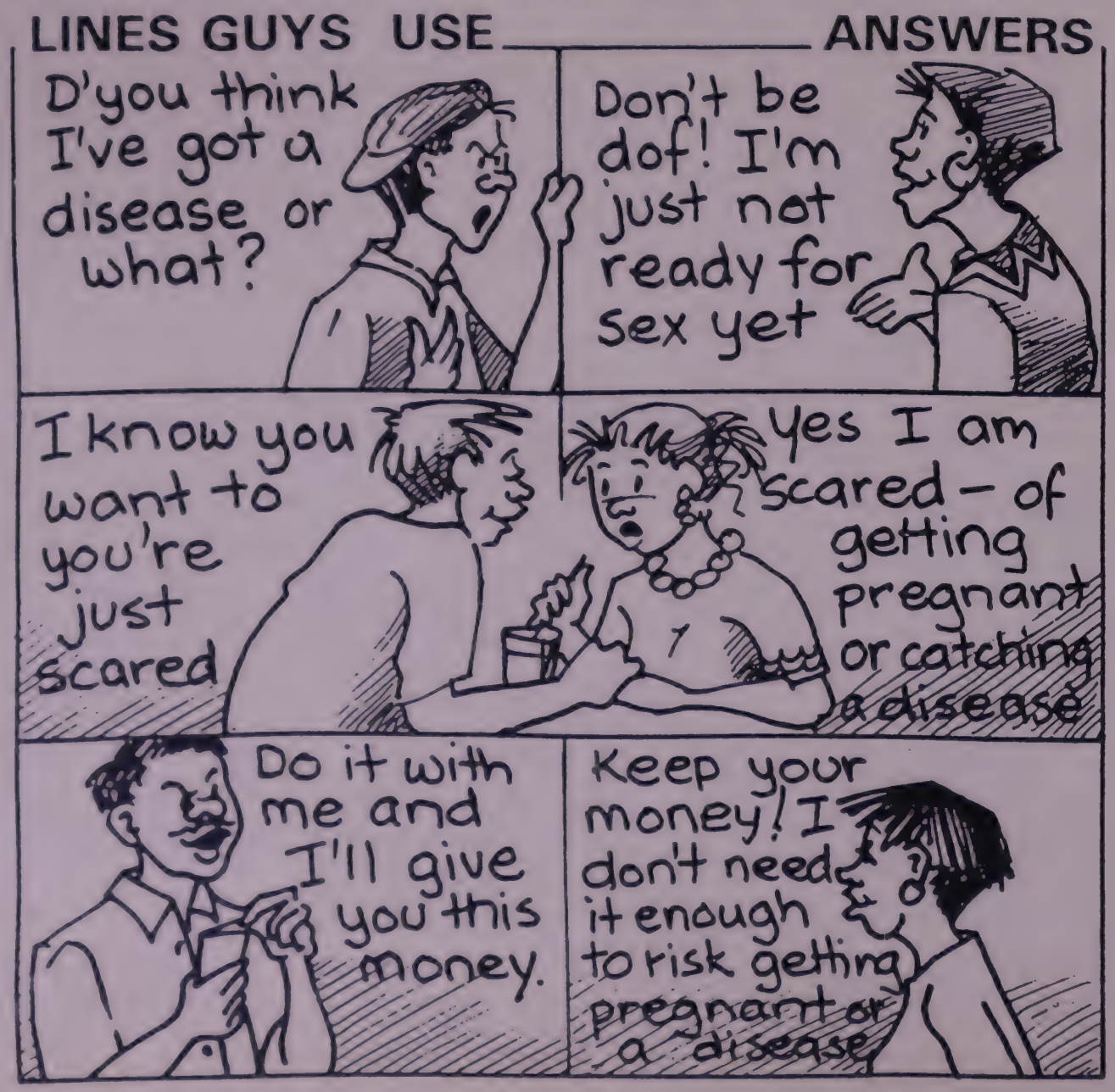
The truth is, if you give in or let yourself be forced or persuaded into having sex, you could destro / your life. Say ***NO***, it's your right.

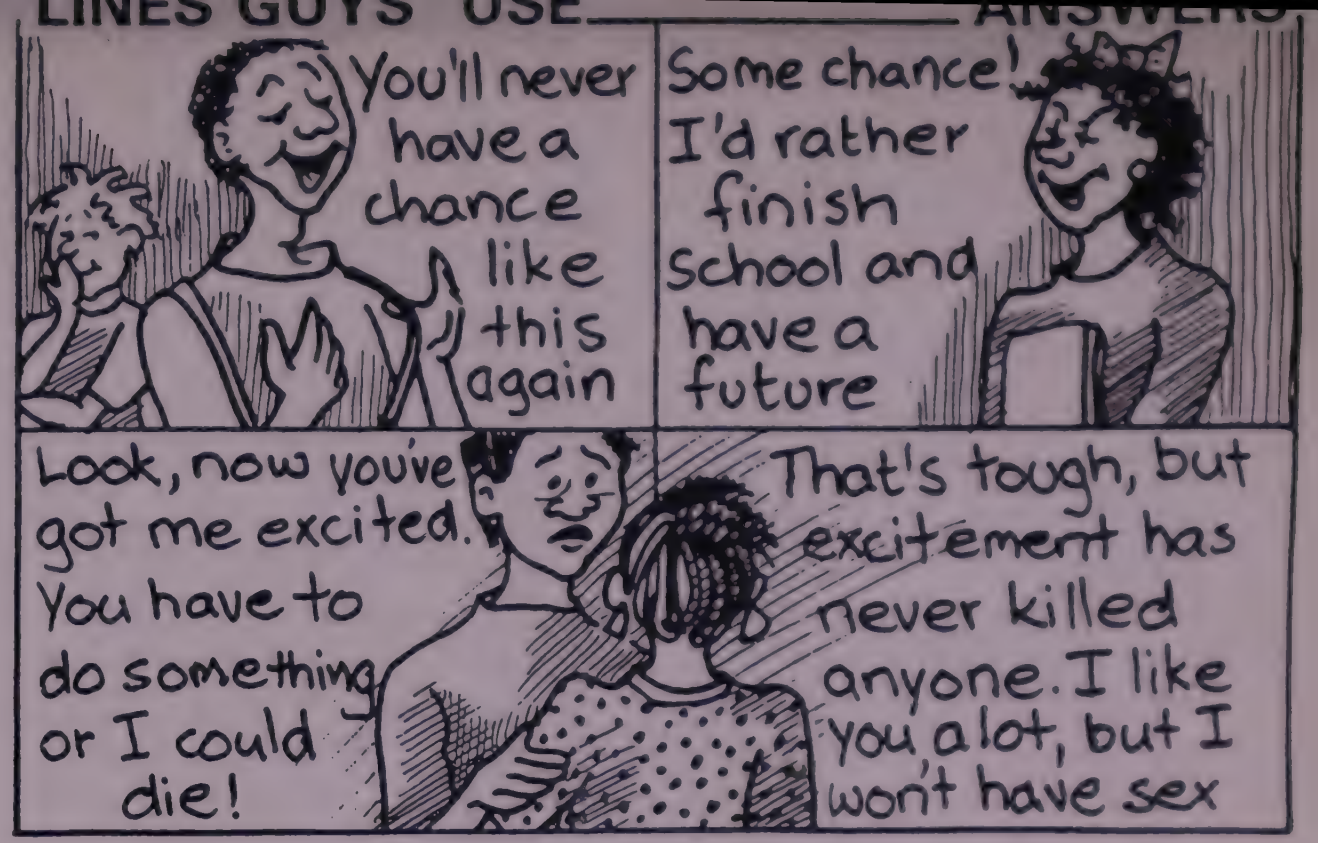
Saying No isn't easy. Your body feels so good when you're with the person you like that you just want to give in. Pressure from this person or friends can be so strong that you feel there's no choice

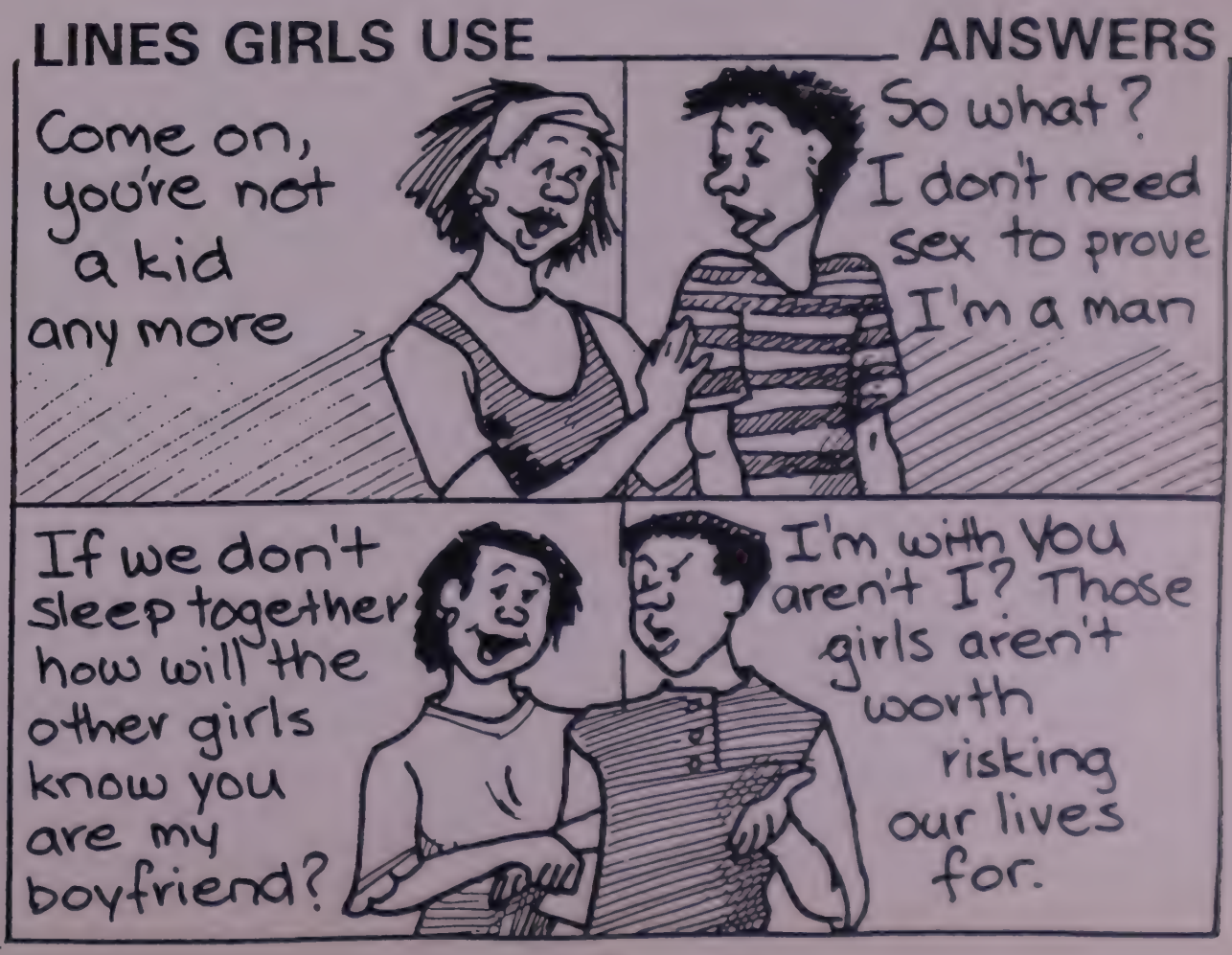
you to say *YES*. In order to stick to your *NO*-decision you need to feel confident, to have a goal and let no-one shake your view of yourself and the future.

You need to have strong answers for those who want to argue and pressure you into having sex. Namibian teenagers have assisted us in identifying the Myths, Lies and Fears that can force kids to give in.

Let us look at some of the lines used by guys and girls to persuade other kids to have sex, and ways to answer them:


LINES GUYS USE
ANSWERS
D'you think I've got a disease or what?
Don't be dof! I'm just not ready for sex yet
I know you want to you're just scared
Yes I am scared – of getting pregnant or catching a disease
Do it with me and I'll give you this money.
Keep your money! I don't need it enough to risk getting pregnant or a disease


LINES GUYS USE
ANSWERS
You'll never have a chance like this again
Some chance! I'd rather finish school and have a future
Look, now you've got me excited. You have to do something or I could die!
That's tough, but excitement has never killed anyone. I like you a lot, but I won't have sex


LINES GIRLS USE
ANSWERS
Come on, you're not a kid any more
So what? I don't need sex to prove I'm a man
If we don't sleep together how will the other girls know you are my boyfriend?
I'm with you aren't I? Those girls aren't worth risking our lives for.

LINES GIRLS USE

If you really loved me you would sleep with me
And if you loved me you'd respect my feelings.
But everybody's doing it
I'm not everyone. I couldn't handle the shame.
Oh come on, no-one will even know
What about me? I will know

The important thing to remember when dealing with someone who's hassling you for sex is to have a straight, direct reply. Avoid using or blaming someone else as your reason for saying *NO*, e.g. "My folks won't like it", or "not now, I'm meeting my aunt". This is not saying *NO*, instead it suggests that you do want sex but that the obstacle is just someone else. Try to be clear that you mean *NO*.

ANSWERS

These lines or arguments use different **strategies to get you into bed.** If you can recognise the types of tricks and know the facts, you will be better prepared with the answers.

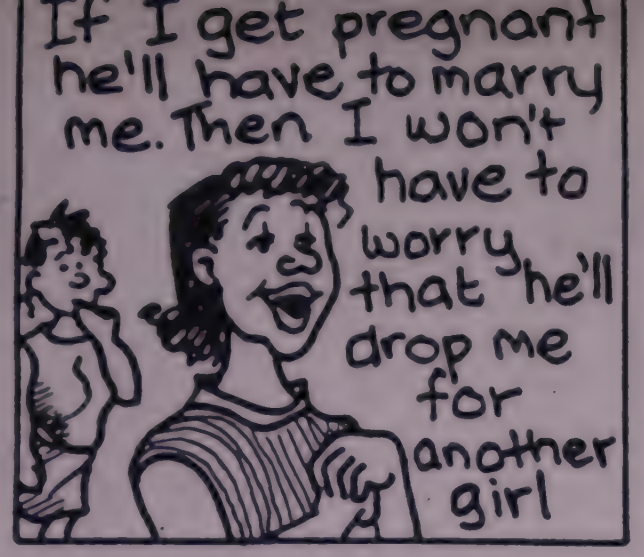
1. WEAKNESS

Women and girls *DON'T* have weaker will power than men. Both guys and girls find it hard to resist, and sex can only happen if both agree. Guys and girls have the right to say *NO*.

2. BLACKMAIL AND PRESSURE FROM FRIENDS

It's tough when you're excluded from a group of friends. The threat of being "uncool" or losing the acceptance of classmates and friends often forces kids to try sex or even do something which is against the law.

Say *NO*. The friends who laugh when you won't give in will turn away if you say yes. Often they will lie and say that they have had sex just



Having a guy's baby or getting a girl pregnant will not keep their love. Love cannot be forced or trapped. Doing this will chase that person away.

You do not have to prove your love or friendship through sex. Anyone who asks you to risk your life and future is not a friend.

3. LACK OF KNOWLEDGE

Often ignorance of their bodies and sex can cause teenagers to give in to sex. The result can be pregnancy or disease spread by sexual contact (STD), both of which can wreck your life.

I don't even have a beard yet so I can't make you pregnant.
Don't be stupid! You must do it at least 5 times before you get pregnant.

JUST REMEMBER:

- ♥ It only takes once to catch an STD or for a girl to get pregnant.
- ♥ Any girl who menstruates, even irregularly, can get pregnant.
- ♥ Yes, a teenage boy, even if he hasn't started a beard, has enough sperm (stock) to make a girl pregnant.
- ♥ Wet dreams (when a boy "wets" himself with sperm in his sleep) are normal and natural. They do not mean he is sick or should be ashamed.
- ♥ Boys and men do not have pain, nor will they die if they don't have sex. They will be okay if you say No, and it is not your duty to "help" them by saying yes.

You're crazy not to do it. He's got a car and everything. He might find a new girl.
You should rather come with us to the disco. He won't come to-day. He's with his wife

4. OLDER MEN AND WOMEN

You and your friends might think it's really cool to have an older lover. The truth is, these people are using you.

* These people have a lot of sexual experience and put you at risk of disease or pregnancy.
* An affair with an older person cuts you off from family and friends of your own age.
* Money and gifts are used to "buy" sex from you. When you receive a gift or a favour from an older man or woman, it is enough to say "Thank you", you don't have to pay with sex.
* If you're hassled for sex by an older man or woman tell a parent or another adult you trust, and avoid taking lifts

from or being alone with strangers.

5. DRUGS AND ALCOHOL

Often relationships with adult lovers involve drugs and alcohol.
Kids may think using these make them more cool or appear more grown-up.
NEVER accept a drink or a drug to "make you relax". A person who is "stoned" or drunk can be made to have sex.
Afterwards you could wake up pregnant or with AIDS.
Alcohol and drugs are addictive and can destroy your life, because you can't study or keep a job.
They can lead you to crime, because when you're addicted you need money to "feed" your addiction.

CONSEQUENCES

Anyone who would risk your life and future through sex is not your friend and does not love you. The consequences of teen sex can ruin your life:

PREGNANCY:

- ♥ A boy who makes a girl pregnant is a joke, and will lose his friends
- ♥ A girl will have to give up her education and her friends to care for a baby
- ♥ The father of the baby might abandon the girl. Money will be short and the girl might suffer without any
- ♥ Babies born to teenage mothers are often born too soon (prematurely), and the mothers are too young to care for them properly. This can cause death.
- ♥ Teenage mothers are at risk of complications in pregnancy and birth which could cause death
- ♥ A girl could be shunned by her family and community

STDs AND AIDS:

Sexual diseases (STDs) are transmitted from an infected person to a healthy person during sex. STDs such as gonorrhoea, syphilis, genital warts, pubic lice (crabs) chancroid (soft sore) and AIDS are dangerous and can cause sterility, infertility, mental illness, cancer, miscarriages and death.

Although most STDs can be treated, some like herpes and AIDS cannot be cured. HIV, the AIDS virus, can stay in your body for many years before you become sick. An HIV or AIDS carrier looks fine and healthy, and there is no way you can tell if the person you sleep with has AIDS. A condom can help protect you, but the only safe way is to say ***NO*** to sex.

FEELING GOOD ABOUT YOURSELF

We can help you to understand your teenage body and its feelings. By now you will be able to recognise the different tricks to make you try sex. <u>BUT</u> your best protection is yourself.
You need to realise that you are a very special person. There is no other person like you anywhere else in the world. You are young and healthy, with your life's opportunities in front of you.
To help you to feel good about yourself, to feel you are someone worth keeping safe, try to following:

- Share your goals with a friend, but don't let the friend change them or impose theirs on you.
- Avoid unrealistic goals that can discourage you. Aim high, but for goals you feel you can achieve.
- Think about what you have already achieved. See where you have succeeded and what you can improve.
- Believe in yourself. Feel confident enough to be able to say ***NO*** and argue with anyone who uses tricks to make you have sex.

POINTS TO REMEMBER

- <u>DATING</u> is a good way of getting to know someone you like. "Love at first sight" is lust, you can't love someone you know nothing about.
- Go out with your date in a group of friends. If alone with your date, stay in open, public places.
- Go straight home after your date. Avoid going to a park or secluded place.
- Avoid drugs or alcohol during dates.
- Don't repay dates with sex. Turn down a date by just saying ***NO***.
- Avoid being alone with a date in a room or home.
- Pay attention to your feelings; if you are uncomfortable in a situation, leave.
- Be honest from the beginning, make it clear that you do not want sex.

- It is very important to delay sex until you are older and able to make informed choices.

- Feel good about yourself and your future. What do you want, a certificate or a pregnancy?

Do you have a problem you't like to discuss?
Or a question you need answered?
Write to Mikki
I.E.C. Unit
Ministry of Health and Social Services
Private Bag 13198
WINDHOEK
Tel: (061) 203-2642 or 203-2736

(All correspondence will be treated in the strictest confidence)

8

MATERIAL ON HIV/AIDS

SENT BY

MEDICAL MISSION INSTITUTE

AIDS AND INTERNATIONAL HEALTH DEPARTMENT

SALVATORSTR. 22

D-97074 WÜRZBURG

GERMANY

WHO

World Health Organization Press Office

PRESS

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Press Release WHO/70
22 September 1995

EMBARGOED UNTIL 22 SEPTEMBER
1995 AT 0500 GMT

DANGEROUS TB TREATMENT PRACTICES THREATENING LIVES OF AIDS PATIENTS

The World Health Organization (WHO) today warned against incomplete and often harmful tuberculosis treatment practices that are robbing years of life from nearly a third of all HIV-positive people.

According to WHO, HIV-positive tuberculosis patients could probably gain more than two years of healthy life with an improved anti-TB treatment strategy known as directly observed treatment, short-course (DOTS).

"By failing to use DOTS to treat TB, we are ignoring one of the most practical and affordable weapons we possess to help people with HIV," said Dr Arata Kochi, Director of the WHO Global Tuberculosis Programme, following a meeting of representatives of foreign aid agencies, ministries of health and NGOs in Oslo, Norway.

WHO estimates that up to two-thirds of all HIV-positive people who seek treatment are being misdiagnosed or treated improperly for TB. The most common error in treating TB patients has been failing to ensure that TB patients actually take their anti-TB medicine every day. Unsupervised TB treatment increases the likelihood that the co-infected patient will not recover from TB. This improper TB treatment practice also allows TB patients to remain infectious for longer periods of time, thereby putting family members, friends and health workers at considerable risk of becoming infected with TB.

Other improper TB control practices are also contributing to the premature demise of HIV-positive people. According to WHO, health workers are often unable to accurately diagnose TB in an HIV positive person. In other instances, the anti-TB drug thiacetazone--which can be lethal to HIV-positive people--is still being prescribed in AIDS endemic areas. While thiacetazone is quite inexpensive, it causes the skin to become detached from the body in some HIV-positive persons and has other severe side effects in up to 27% of HIV-positive patients.

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"An estimated 266,000 HIV-positive people will die from TB this year. Their TB was potentially preventable and treatable," said Dr Arata Kochi. "It is crucial that those who care about AIDS become aware about how to properly control TB."

The Global TB Programme urged that two steps be taken to reduce TB deaths among HIV-positive individuals. First, that all countries quickly adopt directly observed treatment, short-course (DOTS) to control TB. DOTS is a strategy where a health worker or volunteer watches each TB patient swallow a specific regimen of TB medicines for a six-month period. The DOTS strategy uses a combination of anti-TB medicines that do not cause serious side effects in HIV-positive people. This strategy has been nearly 100% effective in curing TB in both HIV-positive and HIV-negative patients. DOTS has been recently used to great success in parts of the world facing the TB/HIV co-epidemic, such as New York City and Tanzania.

Secondly, the Global TB Programme called for the mobilization of research efforts to address the most urgent, practical problems posed by the TB/HIV co-epidemic. This TB/HIV research agenda would investigate how to, 1) develop better ways to coordinate TB control and HIV prevention and care efforts at the district and community level, 2) improve diagnosis and treatment of TB in HIV-infected individuals, 3) remove barriers which discourage people who are ill with TB from seeking care in high HIV prevalence areas, and 4) assess the role of preventive TB therapy for HIV-positive people.

"We need to help equip primary health care workers with the means to incorporate AIDS prevention and TB control strategies into their day-to-day activities," said Dr Paul Nunn, Chief of the Global TB Programme's research unit. "TB workers need to understand how HIV will exploit unsound TB treatment practices. AIDS workers need to understand the importance of the DOTS strategy for caring for their patients."

"While the two diseases greatly overlap, the UNAIDS and the Global TB Programme each have very clear and distinguishable roles to play in combatting the co-epidemic," said Dr Peter Piot, Director of the United Nations' AIDS Programme. "If UNAIDS can succeed in preventing the spread of HIV, there will be much less TB in the world. If the Global TB Programme can succeed in establishing more effective TB control programmes, we can greatly extend the lives of HIV-positive people and save a considerable amount in the cost of caring for AIDS patients."

According to WHO, TB is the leading opportunistic infection to kill HIV positive people. An estimated 266,000 HIV-positive people will die from tuberculosis this year out of an estimated 600,000 AIDS-related deaths. Likewise, HIV is increasingly playing a bigger role in the TB epidemic. Currently, only 9% of TB deaths are related to AIDS, although this percentage is expected to reach 17% by the year 2000.

For more information, contact Kraig Klaudt at (41-22) 791-4627 or Courtenay Singer at (41-22) 791-2189. Fax (41 22) 791 41 99. Global Tuberculosis Programme, WHO, Geneva.

9

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mproving the quality of care for persons with IIV infection in sub-Saharan Africa

obert Colebunders, Rika Decock, Moses Joram Mbeba *

aring for persons with HIV infection is particularly difficult in resource-poor countries. In order to improve the quality f care we first have to evaluate how such care is presently organized. We need a better assessment of the needs and emands of persons with HIV infection as well as their families. Care for persons with HIV/AIDS should be decentralized nd home-based care in a non-stigmatizing way should be promoted. The fight against discrimination of persons with HIV hould be intensified. A lot can be achieved by reorganizing and strengthening existing health care systems, by better stening to patients and families and by promoting solidarity among communities.

ey words: quality of care, HIV infection, AIDS, sub-Saharan Africa

n 1993 the World Health Organization (WHO) estimated hat there were 8 million persons with HIV infection in Africa.[1] AIDS has become the main cause of adult death in many cities in sub-Saharan Africa. In these urban areas it is estimated that up to 50% of hospitalized patients in medical departments have HIV disease.[2] The cost for the care of such large numbers of AIDS patients is enormous. The World Bank has estimated that the care for a person with AIDS in Africa costs about 400 US $/year.[3] At the Kigali Hospital in Rwanda in 1993, 9.7% of the national public health budget was spent on AIDS care.[4] Given the fact that most African countries are able to spend less than 3 US $/person/year for health care and that 1/3 of Africans even have no access to essential drugs such as penicillin and chloroquine[5], such high care costs for AIDS may not seem justifiable. On the other hand, to deny care for persons with HIV infection in Africa is not acceptable. Therefore, we should learn how to use the little financial resources available in the most cost effective way. How can we improve the care for persons with HIV infection in Africa? First, health care interventions should be planned in such a way that no additional harm is caused, as this has certainly happened in the past.

WHAT SHOULD NOT BE DONE?

1 Creating false hopes

Every month, somewhere in the world, a cure for AIDS is announced either by traditional healers or scientists. Such 'discoveries' generally get wide media coverage and often governments use them for political reasons. Such messages not only seriously jeopardize HIV prevention efforts but may also harm persons with HIV infection. Persons with HIV infection as well as their families may spend all their money in order to obtain the 'wonder drug'. Apart from being expensive, some of these 'wonder drugs' might even be toxic. When the patient realizes that the drug is not effective, he may become even more depressed because he loses his last hope. Such discoveries might hamper research efforts to find a cure for AIDS. Indeed, it may make patients reluctant to participate in clinical trials with promising drugs. On the other hand, expensive trials might be necessary to study the effect of these 'wonder drugs', even if there is no scientific basis to believe they may have a beneficial effect. This happened with low dose oral α-interferon which was initially announced to be such a 'wonder drug'.[6] Recently, a WHO-sponsored study performed in Uganda showed the drug had no effect at all.[7]

2 Creating false needs

Certain clinical trials with expensive drugs should better not be performed when it is known from the start that these drugs will never become available to the local population. Antiviral drugs such as zidovudine, didanosine and zalcitabine will probably never have a place in the treatment of a person with HIV infection in resource-poor countries. They are very expensive, have limited *in vivo* antiviral effect and many side-effects.[8] The claim that these drugs significantly improve the quality of life of persons with HIV infection remains unproven. Moreover, the use of these drugs requires biological monitoring, often difficult to carry out in developing countries. In spite of these limitations, these drugs are already used in several African capitals (often sold on the 'black market' for up to 3 times the price of the drug in industrialized

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countries) and African AIDS control programmes are put under pressure in order to obtain them.[9]

3 Misusing the HIV test

HIV testing is increasingly used in Africa, but often for wrong reasons (e.g. mandatory HIV screening before employment, mandatory HIV screening of prostitutes, routine HIV screening in hospitals to protect the medical staff, etc).[10] Moreover, the HIV test is often performed without pre-test counselling and without obtaining the consent of the patient. Post-test counselling services are often not available. HIV testing may be very stressful for patients and their families, especially when little can be offered. Moreover, it may lead to discrimination. HIV testing for diagnostic purposes should only be done if this is thought beneficial to the patient. Voluntary confidential HIV testing of couples may be useful[11] but promoting large scale voluntary HIV testing in order to diagnose HIV infection early will have no or very little impact on the HIV epidemic and is very costly.

4 Spending money on research that will not result in health measures applicable in the region where the research is carried out

Several large clinical trials are underway or planned to assess the efficacy of chemoprophylactic regimens for the prevention of tuberculosis not only in Africa (e.g. in Zambia, Rwanda, Kenya and Uganda) but also in Haiti and Thailand. Chemoprophylactic trials for the prevention of fungal infections and toxoplasmosis have been proposed.[2,12,13] These studies cost millions of dollars. Results of such studies may be very useful for the developed world but will not be applicable to the majority of persons with HIV infection in developing countries.

In many African countries a lot of money is spent on clinical and epidemiological research but very little is done to effectively assist those who are sick. Competing research projects, funded by different donor agencies, are often duplicating studies that have already been done or are ongoing elsewhere. If the research carried out today does not lead to useful applications, international donors may decrease funding in the future.

WHAT SHOULD BE DONE?

1 Defining the real research priorities

In order to improve the care for persons with HIV infection in Africa we first have to improve our understanding of how such care is organized. How is HIV testing done, how are patients cared for in hospitals, at home, in the terminal phase of the disease? What are the attitudes, knowledge and practices of health care service providers concerning the care for persons with HIV?

We have to assess the needs and demands of persons with HIV infection as well as their families. What are their priorities? It is astonishing that in spite of more than 10 years of HIV/AIDS research in Africa, very little is known about these issues.[14-17] It is important that such needs assessments are also carried out in communities where heavily funded research projects are not operational.

2 Strengthening the health care system

Whilst awaiting the results of such studies, we propose the following interventions for improving the quality of care for persons with HIV infection. Such care should be incorporated in the general health care infrastructure. When this infrastructure is deficient, priority should be given to strengthen it. This includes organizing good STD- and tuberculosis-control services at first line health facilities. In the long run this will be the only efficient and affordable way to take care of the growing number of persons with HIV infection in Africa. Because AIDS will remain in Africa for a very long time we should develop long-term plans for the care for persons with HIV infection which are sustainable with little or no external funding.

3 Decentralizing care/organizing home care

Care for AIDS patients should be decentralized to district health systems where care costs are likely to be lower than in reference hospitals. However, this requires a well-functioning district health system where services are provided to populations in a continuous way through a well-organized referral system. As an useful adjuvant to formal care, home-based care should be promoted. Family members should be involved as much as possible in the care for persons with HIV infection. This can be achieved by informing them properly, by training them and by providing them with the necessary skills and facilities to organize home care. This should be done with the help and under the supervision of the primary health care system. By doing so, unnecessary hospitalization can be avoided as well as expensive home visits by mobile HIV caring teams. In several African countries home-care programmes for AIDS patients were shown to be very well accepted by patients and their families.[18] Guidelines for home care have been developed by WHO.[19] Such guidelines should now be nationally adapted and evaluated. The main challenge is how to organize home care in a non-stigmatizing with a high benefit/cost ratio.[20]

4 Introducing treatment strategies with a high benefit/cost ratio

The emphasis should be on the diagnosis/treatment of infectious complications which are easy to diagnose/treat and which occur relatively early in the evolution of HIV disease, such as a *Streptococcus* pneumonia infection or a *Salmonella* infection. A priority should be to diagnose *Mycobacterium*

berculosis infections as early as possible, to improve the mpliance of patients with antituberculous treatment. Anher priority is the early diagnosis and treatment of other xually transmitted diseases which may favour sexual transission of HIV.

uidelines for the medical care of persons with HIV infection ing an algorhythmic approach as proposed by the WHO ould be adapted to the local situation.[21] Drugs with the ghest benefit/cost ratio should be purchased nationally in der to reduce costs.

Organizing social support

he care for persons with HIV infection should include roviding means for adequate nutrition and housing, assistnce with domestic chores, support for dependents, care for rphans, etc. Funerals are very expensive and procedures to btain a death certificate are often complicated.[4] This may ead to the unnecessary hospitalization of terminally-ill paents. Procedures to obtain a death certificate should be mplified allowing AIDS patients to die at home. Because so nany AIDS patients die in hospitals, patients with other iseases may be afraid of being hospitalized and/or might eceive less medical care.

Fighting discrimination

We have to fight against discrimination of persons with HIV. This should be done through continuous information campaigns targeted at the general public, schoolchildren, employees, health care workers, etc. Many persons with HIV infection are afraid of disclosing their diagnosis to others. This causes additional stress. What persons with HIV/AIDS probably need most is to feel that they are not abandoned, that they are still loved by their partner and family. Persons with HIV infection should be able to receive free legal assistance in case of discrimination and acts of discrimination against persons with HIV infection should be recorded.

Fighting misconceptions

There are still a lot of misconceptions about HIV/AIDS. Certainly the role of traditional healers in the care for persons with HIV infection should be recognized.[22] But these traditional healers should be well informed about the disease and should collaborate with national AIDS control programmes. Misconceptions about HIV/AIDS were common among traditional healers in the Mwanza Kagera Region in Tanzania.[23] From Zimbabwe it was reported that certain traditional healers advised HIV-infected men to have sex with young girls 'to clean themselves from the disease'.[24]

Establishing priorities in a realistic way

AIDS will remain in Africa for many years. Even if an effective treatment or vaccine is found, it is very unlikely that this will solve the problem of AIDS in Africa. It is very improbable that the cure of AIDS will consist of one single cheap drug. It is much more likely that it will consist of a cocktail of antiviral drugs, maybe one or more immune modulators and a combination of prophylactic antibiotic treatments. All this will be very expensive. Therefore, it is unlikely that large numbers of AIDS patients in Africa will be able to receive such treatment. For the moment there are a number of HIV vaccine candidates but we have no idea whether one of these vaccines will offer any protection. If an effective vaccine is found it will certainly be expensive. This makes it unlikely that, in the next 10 years, large-scale HIV vaccination campaigns will be started in Africa. Moreover, it may be that, once an effective HIV treatment or vaccine is found, the willingness of the industrialized countries to help solving the AIDS problem in Africa will dramatically decrease. In this way, Africa will remain with its HIV/AIDS burden. A same scenario was observed with tuberculosis. Once an effective treatment for tuberculosis was found, the international effort to help developing countries to establish effective tuberculosis control programmes, decreased. This experience leaves very little place for optimism concerning the AIDS epidemic in Africa.

In their fight against AIDS, African countries will have to rely mainly on themselves. African communities themselves will have to organize the care for persons with HIV infection as well as HIV prevention activities.[25] We have to be realistic about what can be achieved. In the field of HIV prevention, highly cost-effective interventions have been identified, such as social marketing of condoms, treatment and control of other STDs and HIV screening of blood transfusions. These interventions should now be implemented on a large scale. As far as treatment is concerned, we have to admit that there is little we can do, even in rich countries. In developed countries, antiviral drugs are available as well as more facilities to treat opportunistic infections. However, often this may lead to prolonging the suffering of the patients. Africa has the advantage of the tradition of the 'extended family', whereby families take care of sick members. In the absence of a family, 'the clan' may take over this role.[26] A lot can be achieved by reorganizing care, by better listening to patients and their families and by promoting solidarity among communities.

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Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomised controlled trial

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Summary

A randomised trial was done to evaluate the impact of improved sexually transmitted disease (STD) case management at primary health care level on the incidence of HIV infection in the rural Mwanza region of Tanzania. HIV incidence was compared in six intervention communities and six pair-matched comparison communities. A random cohort of about 1000 adults aged 15–54 years from each community was surveyed at baseline and at follow-up 2 years later. Intervention consisted of establishment of an STD reference clinic, staff training, regular supply of drugs, regular supervisory visits to health facilities, and health education about STDs.

12 537 individuals were recruited. Baseline HIV prevalences were 3·8% and 4·4% in the intervention and comparison communities, respectively. At follow-up, 8845 (71%) of the cohort were seen. Of those initially seronegative, the proportions seroconverting over 2 years were 48 of 4149 (1·2%) in the intervention communities and 82 of 4400 (1·9%) in the comparison communities. HIV incidence was consistently lower in the intervention communities in all six matched pairs. Allowing for the community-randomised design and the effects of confounding factors, the estimated risk ratio was 0·58 (95% CI 0·42–0·79, p=0·007). No change in reported sexual behaviour was observed in either group.

We conclude that improved STD treatment reduced HIV incidence by about 40% in this rural population. This is the first randomised trial to demonstrate an impact of a preventive intervention on HIV incidence in a general population.

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Introduction

The cumulative total of adult HIV infections rose to an estimated 18 million by late 1994, and is projected to reach 30 to 40 million by the year 2000.[1,2] Most new infections are acquired in the developing world and are heterosexually transmitted. Large numbers of infections continue to occur in sub-Saharan Africa, the region most severely affected during the first decade of the epidemic. Recently, the epidemic has begun to spread rapidly in some parts of southern Asia, and the number of new infections there may exceed that in Africa within the next 10 years.[2]

In the face of this severe and worsening epidemic, AIDS prevention programmes of varying intensity and efficiency have been set up in most affected countries. However, the impact of these programmes is unclear, due largely to lack of well-designed evaluation studies.[3]

In the absence of an effective cure or vaccine, the main preventive strategy has been health education aimed at achieving a reduction in risky sexual behaviour and, in some countries, the promotion of condom use. Other sexually transmitted diseases (STDs) are highly prevalent in many of the worst affected populations,[4] and observational studies suggest that the sexual transmission of HIV may be enhanced in the presence of such STDs.[5–8] For this reason, the WHO has recommended programmes to improve the managementof STDs as an additional HIV control tool, and it has been suggested that the treatment of bacterial STDs may be one of the most cost-effective health interventions available in some developing countries.[9,10] However, no empirical data have been available on the impact of such measures on the incidence of HIV infection, or on their cost-effectiveness as a public-health strategy.

It was against this background that we undertook a community-based randomised intervention trial in a rural area of north-western Tanzania. The objectives of the trial were to establish a programme for the improved diagnosis and treatment of STDs in the general population, and to measure the impact of this intervention on the incidence of HIV infection and on the prevalence and incidence of STDs. The improved STD services were designed to be feasible rather than optimal, were integrated with the Tanzanian primary-health-care system, and were based on syndromic treatment algorithms as recommended by WHO.[11] We report the impact of the programme on HIV incidence.

Methods

The trial was conducted between November, 1991, and December, 1994, in the Mwanza region of Tanzania, which is situated on the southern shores of Lake Victoria. The study population, and the rationale and design of the trial and of the intervention programme, have been described,[11] but the most important aspects are summarised below.

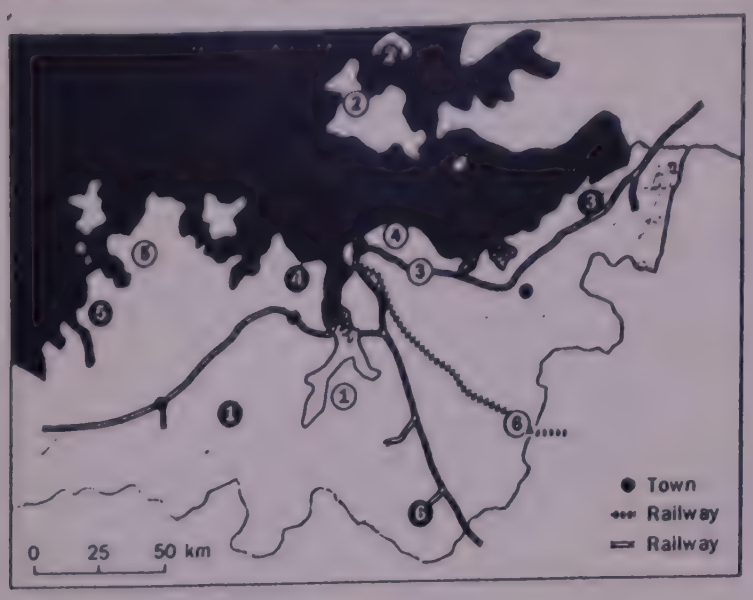

Figure 1: **Map of Mwanza region**
Numbered circles indicate location of six pairs of study communities; intervention communities are shown in black circles.

STD intervention programme

The programme had five components. First, establishment of an STD reference clinic and laboratory in Mwanza town to monitor the aetiology of STDs and the effectiveness of the treatment algorithms. Second, training of existing staff from health centres and dispensaries in the intervention areas in the diagnosis and treatment of STDs with syndromic treatment algorithms. The training comprised 1 week of classroom teaching followed by 2 weeks of practical training at the STD reference clinic in Mwanza town. The staff were also trained to provide patients with STDs with health education and to offer free condoms for use during the current STD episode. Third, regular supply of the drugs needed to treat STDs effectively. To ensure continuous availability of drugs, a special delivery system was set up to supplement the supplies provided through the national essential drugs programme. Fourth, regular supervisory visits by a programme officer to each health facility to provide in-service training, and to check drug supplies and patient records. Finally, periodic visits by a team of health educators to the villages served by each health facility to provide information on STDs, focusing on the availability of effective treatment and encouraging prompt attendance for treatment of symptomatic STDs.

Impact evaluation

12 large communities, each consisting of the catchment population of a health centre and its satellite dispensaries, were selected as the elements for randomisation. A previous survey in the region had demonstrated substantial geographical variations in HIV prevalence, with a higher prevalence in roadside settlements than in rural villages,[13] and a raised prevalence was also observed in villages close to the lake shore. To help ensure comparability of the intervention and comparison communities with respect to baseline HIV and STD prevalences and risk factors for infection, the communities were matched into six pairs according to the following criteria: roadside, lakeshore, island, or rural location; geographical area (paired communities were generally in the same district and less than 50 km apart); and prior STD attendance rates at the health centre, mainly to eliminate those health centres that were barely functioning.

In each matched pair, one community was randomly chosen to receive the STD intervention immediately following the baseline survey, whereas the comparison community received the intervention after the follow-up survey 2 years later. Locations of the study communities are shown in figure 1.

The impact of intervention on the incidence of HIV infection and on the prevalence and incidence of STDs was measured in a random cohort consisting of 1000 adults from each community. Clusters of households were sampled randomly from the population residing within 90 min walking distance of the health centre, by a sampling scheme described previously.[14] All adults aged 15–54 years in the selected households were eligible for inclusion.

Surveys of the study cohort were conducted at baseline and at follow-up 2 years later. Informed oral consent was obtained from each adult at enrolment, and personal characteristics, circumcision status, and history of STDs were recorded through a confidential interview. A sample of venous blood was taken from all consenting subjects. Men were asked to provide a first-void urine sample, which was tested on the spot with a leucocyte esterase dipstick (LED, Nephur-Test+Leuco, Boehringer-Mannheim). Men with a positive LED test, and those reporting or found on examination to have urethral discharge, were asked to provide a urethral swab. All participants were seen by a clinician, who provided treatment for symptomatic STDs and other illnesses.

Laboratory methods

Serum was separated and tested for HIV antibodies by ELISA assay (Vironostika HIV MIXT Microelisa, Organon, Teknika, Boxtel, Netherlands). All positive samples underwent confirmatory testing with a methodologically independent ELISA (Wellcozyme HIV 1+2 GACELISA, Murex Diagnostics, Dartford, UK) and, in case of discrepant or indeterminate ELISA results, a western blot test (HIV-1 Westernblot, Epitope, Beaverton, Oregon, USA). Western blot results were considered positive if WHO criteria were fulfilled.[15] Indeterminate western blot results were considered negative in the analysis. HIV-2 has yet to be observed in this area, and data on HIV prevalence and incidence can be taken to refer to HIV-1 infection.

Serological tests for syphilis were carried out by the rapid plasma reagin (RPR) test (with VD 25 VDRL Carbon Antigen, Murex, Dartford, UK) and the *Treponema pallidum* haemagglutination test (TPHA, Fujirebio, Tokyo, Japan). TPHA seropositivity was considered to indicate past or current syphilis infection, while positivity on both TPHA and RPR tests was considered indicative of active syphilis. An initial RPR test was done in the field, and subjects with a positive RPR test were treated on the spot for syphilis.

Urethral swabs were tested for *Neisseria gonorrhoea* by gram stain, and for *Chlamydia trachomatis* by an antigen capture enzyme immunoassay (IDEIA Chlamydia, Novo Nordisk Diagnostika, Cambridge, UK). Gonorrhoea was diagnosed when intracellular gram negative diplococci were seen in urethral smears. For logistical reasons, it was not possible to attempt isolation of *N gonorrhoea* in this rural population-based study. Chlamydia infection was diagnosed after a confimatory blocking assay on all positive samples. Urethritis was defined as *N gonorrhoea/C trachomatis* infection and/or the presence of five or more polymorphs per high power field in urethral smears.

Sexual behaviour survey

To determine whether any differences in HIV incidence between intervention and comparison groups may have resulted from differences in sexual behaviour, separate random sampling of one in eight cohort members was done after the baseline and follow-up surveys. The selected individuals were revisited and interviewed concerning sexual attitudes and practices with a detailed questionnaire.

Statistical methods

Since randomisation was applied at the community level, statistical inference needed to take account of between-community variations in HIV incidence. Within each matched pair, the risk ratio (RR) of HIV incidence in the intervention community relative to the comparison community was computed. A point estimate of the overall RR was calculated as the geometric mean of the pair-specific RRs. Statistical significance was assessed with the paired t test on the logarithms of the RRs, and corresponding 95% CIs for the RR were obtained. Significance was further evaluated with the non-parametric sign test.

	Men		Women	
	Intervention (n=2881)	Comparison (n=2998)	Intervention (n=3261)	Comparison (n=3397)
HIV positive	3·4	4·1	4·1	4·7
Syphilis (TPHA+)	15	14	17	16
Active syphilis (TPHA+/RPR+)	7·9	7·8	9·5	8·8
NG/CT	2·4	3·2	..	..
Symptomatic NG/CT	0·3	0·5	..	..
Urethritis	1·0	1·1	..	..
Symptomatic urethritis	1·0	1·3	..	..
Reported GUS ever	1·4	1·6	5·1	6·1
Reported GDS ever	2·4	3·1	7·7	8·7

NG/CT=*N gonorrhoea/C trachomatis*, GUS=genital ulcer syndrome, GDS=genital discharge syndrome.

Table 1: Baseline prevalence (%) of HIV infection and other STDs by sex, in intervention and comparison communities

To adjust for differences between the intervention and comparison communities that might bias the estimate of impact, a logistic regression model was fitted using data on individuals and including terms for the matched pair, age-group (15–19, 20–24, 25–29, 30–34, 35–44, 45–54 years), sex, travel out of the village during the follow-up period, reported history of STD (ever) at the baseline survey, and male circumcision status. By computing observed and expected numbers of HIV seroconversions in the intervention (O_1, E_1) and comparison (O_0, E_0) communities, an adjusted RR was obtained for each pair as $(O_1/E_1)/(O_0/E_0)$. Adjusted significance tests and confidence intervals were calculated as before.

Evaluation of the impact of the intervention on the prevalence of STDs at follow-up was based on the seroprevalence of active syphilis, and on the prevalence of confirmed urethritis and *N gonorrhoea/C trachomatis* infection in men. Since many urethral infections were symptomless,[14] additional analyses were done of the prevalence of symptomatic urethritis and *N gonorrhoea/C trachomatis* infections in men. Statistical methods were as for HIV incidence.

The number of communities and the size of the cohort were chosen to provide 80% power of detecting a 50% reduction in annual HIV incidence from 1% to 0·5%, taking account of the expected level of between-community variation in incidence rates.[13]

Results

Cohort enrolment and baseline comparability

12 537 adults were enrolled at the baseline survey, representing 85% of eligible individuals from the sampled households. Detailed results of the baseline survey have been presented previously.[14] The randomisation and matching procedures were shown to have provided intervention and comparison groups that were generally similar at baseline with respect to HIV prevalence, history and prevalence of STDs, and measured risk factors for HIV infection. However, there was some imbalance in reported history of STDs (ever), travel away from the village, and male circumcision, and so these variables were adjusted for in the impact analysis.

	Intervention	Comparison	Total
Men			
Recruited	2881	2998	5879
Seen at follow-up	2052	2187	4239
Coverage (%)	71	73	72
Women			
Recruited	3261	3397	6658
Seen at follow-up	2234	2372	4606
Coverage (%)	69	70	69
Total			
Recruited	6142	6395	12 537
Seen at follow-up	4286	4559	8845
Coverage (%)	70	71	71
Losses to follow-up	1856	1836	3692
Moved	814 (13%)	924 (14%)	1738 (14%)
Temporary absence	291 (5%)	459 (7%)	750 (6%)
Died	87 (1%)	109 (2%)	196 (2%)
Other	664 (11%)	344 (5%)	1008 (8%)

Table 2: Numbers recruited to cohort, coverage at follow-up survey, and reasons for loss to follow-up in intervention and comparison communities

Baseline prevalences of HIV and STDs are summarised in table 1. Overall HIV prevalences at baseline were 3·8% and 4·4% in the intervention and comparison groups, respectively, while prevalences of active syphilis were 8·7% and 8·3%, respectively. HIV prevalence was higher in the intervention community in three matched pairs, and in the comparison community in the other three pairs.

Implementation of intervention

The intervention programme was successfully established in all six intervention communities. Clinic records showed that 11 632 cases of STDs were treated in the intervention health units during the 2 years of follow-up. Previous data[17] (unpublished observations) have shown that the treatment regimens would be expected to achieve cure in over 90% of cases.

Coverage at follow-up survey

8845 (71%) cohort members were seen again at the follow-up survey 2 years later. 1738 (14%) had moved permanently away, 750 (6%) were temporarily away, 196 (2%) had died, and 1008 (8%) did not participate for other reasons (refusals, inaccessibility due to heavy rains, or reason not recorded). Coverage rates were very similar in the intervention (70%) and comparison (71%) groups (table 2). Reasons for non-participation were broadly similar in the two groups, although losses due to "other" reasons occurred somewhat more frequently in the intervention group.

Impact on HIV incidence

HIV prevalence at baseline, and HIV seroconversions over the 2 years of follow-up, are shown for each community in

	HIV baseline prevalence (%)		HIV seroconversions		Crude RR (95% CI)	Adjusted RR* (95% CI)
	Intervention	Comparison	Intervention	Comparison		
Matched pair/stratum						
1 Rural	3·9	3·0	5/568 (0·9%)	10/702 (1·4%)	0·62	0·59
2 Islands	2·0	1·6	4/786 (0·5%)	7/833 (0·8%)	0·62	0·65
3 Roadside	6·8	8·6	17/650 (2·6%)	20/630 (3·2%)	0·82	0·88
4 Lakeshore	5·4	4·3	13/734 (1·8%)	23/760 (3·0%)	0·59	0·62
5 Lakeshore	2·8	4·7	4/732 (0·5%)	12/782 (1·5%)	0·36	0·35
6 Rural	1·8	4·5	5/699 (0·7%)	10/693 (1·4%)	0·50	0·50
Overall	3·8	4·4	48/4149 (1·2%)	82/4400 (1·9%)	0·57† (0·42–0·76)	0·58† (0·42–0·79)

*Adjusted for age, sex, travel during follow-up period, history of STD (ever) at baseline, and male circumcision. †Geometric mean.

Table 3: HIV incidence over 2 years in intervention and comparison communities, and crude and adjusted risk ratios

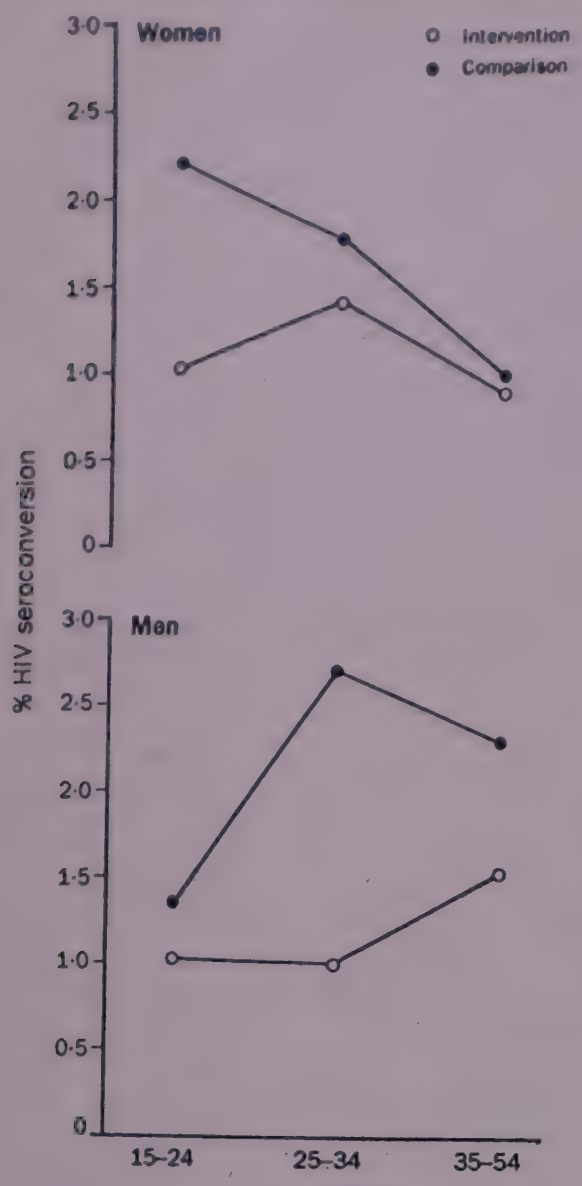

Figure 2: **Incidence of HIV infection over 2 years by age and sex in intervention and comparison communities**

table 3. HIV results were available at both baseline and follow-up for 8825 (99·8%) of those seen at follow-up. Of these, 276 (3·1%) were HIV positive at baseline, so that HIV incidence calculations were based on 8549 initially seronegative individuals—4149 in the intervention group and 4400 in the comparison group.

Over the 2 years of follow-up there were 48 seroconversions (1·2%) in the intervention group and 82 (1·9%) in the comparison group. HIV incidence varied substantially between matched pairs, but was consistently lower in the intervention community than the comparison community in all six matched pairs (table 3). When the data were analysed to take account of between-community variation, the RR for seroconversion in intervention compared with comparison communities was 0·57 (95% CI 0·42–0·76, p=0·004). When the analysis was adjusted for variables showing an imbalance beteeen the two treatment groups at baseline, the RR was virtually unchanged (0·58, 0·42–0·79, p=0·007). A non-parametric test gave similar results (two-sided p=0·03 for both unadjusted and adjusted analyses).

Seroconversion rates are shown by age and sex in figure 2. HIV incidence in the comparison group was highest in women aged 15–24 years and men aged 25–34 years. In the intervention group, the greatest proportionate reductions in incidence occurred in the same two age/sex groups. However, numbers of seroconversions at each age were small, and the differences in effect between age/sex groups were not statistically significant (test for

Marker	Prevalence		Crude RR* (95% CI)	Adjusted RR*† (95% CI)
	Intervention	Comparison		
Active syphilis	445/4260 (10·4%)	516/4539 (11·4%)	0·90 (0·78–1·06)	0·92 (0·78–1·07)
NG/CT‡	52/2052 (2·5%)	66/2187 (3·0%)	0·88 (0·27–1·68)	0·85 (0·26–1·82)
Symptomatic NG/CT‡	19/2052 (0·9%)	26/2187 (1·2%)	0·58 (0·14–2·51)	0·72 (0·25–2·07)
Urethritis‡	119/2052 (5·8%)	152/2187 (7·0%)	0·84 (0·31–2·26)	0·84 (0·32–2·20)
Symptomatic urethritis‡	32/2052 (1·6%)	54/2187 (2·5%)	0·48 (0·09–2·70)	0·49 (0·09–2·55)

NG/CT=*N gonorrhoea/C trachomatis*.
*Geometric mean of pair-specific risk ratios. †Adjusted for age, sex, travel during follow-up period, history of STD (ever) at baseline, and male circumcision.
‡Men only.

Table 4: **Markers of STD prevalence at follow-up in intervention and comparison communities, and crude and adjusted risk ratios**

interaction obtained by logistic regression, ignoring between-community variation, gives $\chi^2=2·69$, 5 df, p=0·75).

Impact on STD prevalence

Markers of STD prevalence at follow-up in the intervention and comparison communities are shown in table 4. Prevalence was consistently lower in the intervention group for all markers. However there was substantial between-community variation, and none of the differences were statistically significant when this variability was taken into account. The greatest effect observed was on symptomatic urethritis in men, with prevalences at follow-up of 1·6% in that intervention group and 2·5% in the comparison group, giving an adjusted RR of 0·49 (CI 0·09–2·55, p=0·32).

Sexual behaviour

Results from the sexual behaviour surveys at baseline and follow-up are summarised in table 5. At baseline,

	Men		Women	
	Intervention	Comparison	Intervention	Comparison
Baseline				
n	237	281	298	301
Lifetime partners (%)				
0	1	3	3	4
1	7	5	28	26
2–4	18	22	47	53
5–19	44	44	19	16
20+	31	26	3	1
Partners past year (%)				
0	7	10	9	10
1	44	36	78	83
2	22	25	9	6
3–4	18	22	3	1
5+	10	8	1	0
Follow-up				
n	216	268	248	255
Partners past year				
0	5	4	10	10
1	42	46	81	75
2	27	26	7	12
3–4	18	19	2	2
5+	8	6	0	0
Casual partners past 2 years				
0	62	55	89	87
1	14	17	6	7
2	10	11	3	3
3+	14	17	2	3

Table 5: **Numbers of sexual partners reported in intervention and comparison communities at baseline and follow-up**

reported numbers of lifetime sex partners and of sex partners during the past year were similar in the intervention and comparison groups in both sexes. At follow-up, reported partners during the past year showed no change from baseline, and there was still no material difference between the intervention and comparison groups. Data were also collected at follow-up on reported "casual" partners during the past 2 years, defined as all sex partners other than those described as "regular" or living with the respondent. Similar results were again obtained in the intervention and comparison groups.

At baseline only 2% of men reported sexual contact with bar girls or prostitutes during the past year, and this question was not repeated at follow-up. Information was collected at follow-up on condom use during the follow-up period. Condom use with sex partners other than their spouse was reported by only 2·4% of men (intervention 1·6%, comparison 3·0%) and 2·3% of women (intervention 2·7%, comparison 1·8%). Only three individuals reported regular use of condoms.

Discussion

Rational health policy decisions depend on reliable data on the cost-effectiveness of different health interventions. Because of the urgency of the AIDS epidemic, interventions have had to be made without the benefit of such data. Although a few evaluation studies have been published,[15-20] these have been observational in design, and this is the first report of a randomised controlled trial of a preventive intervention against HIV in the general population anywhere in the world.

Although WHO has advocated improved STD treatment as an additional HIV control strategy for some years, the empirical basis for this policy has been slender. While evidence from observational studies is consistent with the hypothesis that STDs act as a biological cofactor for HIV transmission,[5-8] there are substantial difficultes in interpreting such data, and the magnitude of any such effect is unknown.[21-23] The impact of improved STD treatment depends on the proportion of HIV infections in the general population that are attributable to the cofactor effect of STDs, and on the reduction in STD prevalence that might be achieved by an intervention programme, and neither is easy to predict. By incorporating randomisation within the phased introduction of an STD intervention programme in the Mwanza region of Tanzania, we have been able to obtain reliable data on the impact of this programme on HIV incidence.

We have demonstrated an overall reduction in HIV incidence of about 42% over 2 years of follow-up. The reduction occurred in both sexes, and was observed consistently in all matched pairs of study communities. The observed annual incidence of 0·9% in the comparison group was close to the 1% assumed in the study design, and similar to the incidence observed in the rural population of neighbouring Kagera region.[24] Since the intervention was randomised at the community level, it was essential to use statistical methods that took account of between-community variation in incidence. Such analysis demonstrated a highly significant impact, and it is therefore very unlikely that chance accounted for the observed differences. Are there any sources of bias which might account for the findings?

These results might be explained by a lack of comparability between the treatment and comparison communities, such that HIV incidence would have differed in the absence of intervention. Although matching and randomisation should have minimised this problem, with 12 study communities some differences cannot be ruled out. However, data collected at baseline support the comparability of the two groups and, in particular, baseline prevalences of HIV and syphilis were similar.[11] Where imbalances in risk factors were identified, these were adjusted for in the analysis, with little effect on the impact estimates.

Losses to follow-up are an important source of bias in prospective studies, since those lost may differ in risk from those continuing under follow-up. Of our cohort, 71% were seen at follow-up, or 83% after excluding those who had died or moved away permanently. These coverage rates are within the range generally considered acceptable in population-based studies. Coverage rates were almost identical in the intervention and comparison groups, and reasons for loss to follow-up were broadly similar, although losses due to "other reasons" were somewhat higher in the intervention group. This discrepancy was due mostly to a low coverage rate in one intervention community, which became inaccessible due to onset of the rains, and to field worker error in another intervention community resulting in failure to record reasons for some losses. It seems unlikely that the comparison of the two groups has been influenced substantially by losses to follow-up.

The HIV testing algorithms employed were highly sensitive and specific, but a small number of false positives or negatives cannot be ruled out. Since the HIV testing laboratory was kept blind to the origin of the serum specimens, any such misclassification should not be different between the two study groups, and the effect of misclassification would be modest dilution of the intervention effect.

Further bias may have resulted from "contamination" effects—for example, if individuals from comparison communities travelled to intervention villages to take advantage of the improved services. In our trial, the study communities were carefully chosen with respect to the geography of the region, so that distances between communities were large, and travel between them difficult and time-consuming. To check for this possibilty, however, data were collected at the intervention health units on the place of residence of patients treated for STDs. During the 2 years of follow-up, only 59 patients from the comparison communities were recorded at these units, representing only 0·5% of those treated for STDs. The effect of any contamination bias would again be to dilute the effect of the intervention. The estimate of impact may therefore be an underestimate.

We conclude that there is strong evidence that our STD intervention programme has a substantial effect on HIV incidence in this rural population. Might this be explained by changes in risk behaviour in the intervention communities? The main focus of the intervention was on the provision of improved STD treatment services. Periodic visits were made by the project team to the intervention villages to inform the population about STDs, the main emphasis being on the importance of seeking treatment promptly and on publicising the improved treatment services available. These visits were not expected to have a substantial impact on patterns of sexual behaviour. Health education activities of the National AIDS Control Programme continued equally in the intervention and comparison communities during the

follow-up period. Although health workers in intervention units were trained to offer condoms to patients attending with STDs, patient registers indicate that only 0·9% of patients took condoms. To provide empirical data on behavioural change, special surveys of sexual behaviour were conducted at both baseline and follow-up in random samples selected from the study cohort. These data indicated no change in sexual behaviour over the 2-year follow-up period, and no material difference between the intervention and comparison communities. Furthermore, condom use remained at a very low level in both groups. Whereas condoms now seem to be relatively well-accepted in Mwanza town, due partly to the intensive condom promotion activities there, acceptability and use of condoms remain low in rural areas and more intensive interventions will be needed to change this pattern.

In the absence of sexual behaviour change, the most plausible explanation for our results is that the STD treatment programme reduced HIV incidence by shortening the average duration of STDs, thus effectively reducing the probability of HIV transmission. The data on STD prevalences were consistent with this hypothesis, all measured indicators showing a lower prevalence in the intervention group than in the comparison group at follow-up, but none of these effects was statistically significant. Moreover, some indicators showed some imbalance at baseline.

An intervention based on syndromic treatment of self-reporting cases would not be expected to have a substantial effect on the prevalence of symptomless infections. The high frequency of symptomless infections in men in this population was not recognised when the trial was designed,[16] and the sample size was too small to detect a significant effect on symptomatic infections. The most reliable measure of symptomatic infections in our study cohort was the prevalence of confirmed urethritis in men reporting symptoms at the time of our survey, and it is of interest that this indicator showed the greatest reduction in the intervention group compared with the comparison group.

Our data on STDs were limited by logistical constraints on the diagnostic methods that could be employed in a rural field survey, and by the subjective nature of responses on symptomatic infections. Future trials will need to pay careful attention to these difficulties.

The magnitude of the effect on HIV incidence is the clearest evidence to date that a large proportion of HIV infections in this population are attributable to the cofactor effect of STDs, and this may help to explain the rapid heterosexual spread of HIV in many parts of sub-Saharan Africa. The largest impact of intervention was seen in women aged 15–24 and men aged 25–34; these are the age/sex groups in which the highest incidences of HIV were observed in the comparison communities, and STDs might play a particularly important part in facilitating HIV transmission in these groups. If an STD intervention strategy that relied on effective treatment of self-presenting symptomatic cases is able to reduce HIV incidence by almost half, more intensive STD control measures might have a greater effect.

How generalisable are our results to other rural populations in Africa? With an adult HIV prevalence of around 4% and an annual incidence of around 1%, the rural population of Mwanza region is fairly typical of many other parts of eastern and southern Africa. Although information on the prevalence of STDs in African population is sparse, our data are similar to other published results.[4,23] Furthermore, the intervention strategy we adopted was chosen for its potential replicability in low-income countries, and was designed to be implemented through routine primary-health-care services. However, ease of implementation will clearly vary according to the structure and funtioning of the health services. To ensure a constant supply of the drugs needed for STD treatment, the intervention in Mwanza region incorporated a special delivery system to supplement the supplies provided through the national essential drugs programme. The cost analysis will need to examine likely variations in cost and effectiveness if a less intensive intervention were established—for example, if the programme were to rely on the routine drug supply system, or if supervisions were carried out less frequently.

Many other parts of the developing world, including southern Asia where the HIV epidemic is now spreading rapidly, have high rates of STDs and poor STD treatment services, so our intervention strategy is potentially of much wider applicability. Educational interventions, aimed at modifying risk behaviour, were not evaluated in this trial, but should in our view remain an important priority for national AIDS control programmes. However, our results suggest the importance of complementing these activities with improvements to STD treatment services wherever STDs are highly prevalent. Commentators have emphasised the inadequacy of the resources being directed globally to HIV prevention, in particular in the developing countries most affected by the epidemic. This failure may partly reflect "donor fatigue" and doubts about the impact of control activities. The demonstration that HIV incidence can be almost halved by a modest intervention in one of the world's most disadvantaged countries should provide a message of hope, and help stimulate renewed efforts to control this epidemic throughout the developing world.

We thank the Principal Secretary, Ministry of Health, the manager of the National AIDS Control Programme, and the Director General of the National Institute for Medical Research, Tanzania, for permission to carry out and publish the results of this study; the Regional Medical Officer, Mwanza, the Director of the National Institute for Medical Research, Mwanza, the Director of the Bugando Medical Centre, Mwanza, the Director General of the African Medical and Research Foundation, and regional, district, ward, and community leaders for their support; and we thank the populations of the study communities for their support and hospitality. We also thank Dr Ties Boerma for assistance with additional data analysis, Prof Peter Smith, and Dr Maria Paalman for helpful comments on earlier versions of the manuscript, and Dr Lieve Fransen for her continuous support. The trial was supported by the European Communities (DGVIII), with additional funds from the UK Overseas Development Administration, the EC Life Sciences and Technologies for Developing Countries programme, the Centre for International Migration and Development, Germany, and the UK Medical Research Council.

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STD control for HIV prevention—it works!

See page 530

Prevention and management of sexually transmitted diseases (STDs) have seldom ranked high on national healthcare priority lists, despite their serious threat to health, especially of women and newborn babies.[1] With the emergence of a new lethal STD, HIV, and the increasing evidence that sexually acquired lesions and inflammation could facilitate HIV transmission, the picture has changed.[2] STD case-management has increasingly been included in HIV-prevention strategies but its potential impact on the spread of HIV remained controversial. Furthermore, STD control is often thought to be a complex and expensive strategy that drains resources from promotion of condoms and other safer sex behaviours.

In this issue, Grosskurth and colleagues report the results of a well-designed community randomised trial which show a 42% reduction of HIV incidence as a result of improved STD case-management in a rural area of Tanzania. As the researchers note, the magnitude of the effect on HIV incidence observed in this trial is the clearest evidence so far that a large proportion of HIV infections in this population are attributable to the enhancing efect of STDs. Even more important, this study shows that simple replicable STD care activities integrated into primary healthcare services can lead to a considerable reduction of HIV. Although there were earlier reports of a significant decline of HIV incidence as a result of STD case-finding in high-risk women,[3] the Mwanza trial shows convincingly for the first time that the concept of STD control for HIV prevention works in the general population. If shortening the duration of self-reported STDs, mainly in males, results in a 42% reduction of HIV incidence, what would have happened if more aggressive strategies had been implemented—eg, addressing symptomless STDs via case-finding among vulnerable groups? One could reasonably expect an even greater effect.

What lessons can we learn from this study? With an apparently low key intervention (including training of healthcare workers in STD syndrome management, making available effective antibiotics for STDs, and promoting healthcare-seeking behaviour) a large effect can be obtained in terms of the proportion of STDs cured by the health services, especially when baseline quality of STD care is poor.[4] However, the replicability and sustainability of this minimal package should be seen in the context of declining quality of health systems in many developing countries. For example, access to STD drugs is primarily a function of general access to drugs, except if separate distribution systems are established, which was the case in the Mwanza trial.

In the Tanzanian study there was no difference in sexual behaviour and condom use in the intervention and control communities. From a methodological point of view, this observation makes a more convincing case for the role of STDs as cofactors in HIV incidence, but in public health terms this finding is worrisome. Healthcare workers confronted with STD patients should not miss the opportunity to talk about safe sex and promote condoms.[5] The disappointingly low condom uptake among the trial participants in Mwanza contrasts with experience in other HIV/STD prevention projects.[3,6,7] Promotion of behaviour change during clinic visits, although limited by time constraints, remains one of the most neglected components of STD/HIV prevention activities in developing countries.

One of the most striking findings of this intervention trial was that the largest impact on HIV incidence occurred among the very young women (15–24 years). The potential for STD/HIV reduction is the largest among young women, who are at increased risk for STD and HIV acquisition because of both behavioural and biological mechanisms (immature cervix with large area of ectopy).[8,9] Special attention should be given to this highly neglected group of patients, many of whom are adolescents, in terms of comprehensive reproductive health education and delivery of services. Recent interest in integrating STD services in family planning and maternal and child health may work well for older women, but unmarried adolescents are often not welcome or make little use of such facilities.

We still do not know how best to provide accessible and effective STD care for groups such as adolescents or sex workers. The lack of simple technical tools to detect gonococcal and chlamydial infections in women is a first obstacle, and the syndromic approach to case-management works poorly in symptom-free women. With respect to service delivery, waiting for clients to come to the clinic is not enough. Outreach activities, community involvement, and low-threshold services are important components if we want to influence these hard-to-reach populations.

HIV is still spreading fast; the problem is urgent. We have learnt that no single approach will contain the epidemic, and we need all the means that are available, how imperfect they may be. The Mwanza study confirms that improving STD care-management is an important additional HIV prevention strategy. Its potential benefit will clearly depend on the prevalence of STD in the population, and the effectiveness of the STD programme. Rather than focusing our efforts on further quantifying the attributable risk of STD control, we should now put all our energies into determining how best to deliver STD care, especially to highly vulnerable populations.

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MATERIAL ON HIV/AIDS

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Vaginal Microbicides for the prevention of HIV
(Briefing from the UK NGO AIDS Consortium)

Abstinence, monogamy and condoms (plus nonoxynol 9) are the only strategies we have at present to prevent the spread of HIV. These are all strategies which call for honesty, trust and consideration between sexual partners, and for which women must depend on their male partners. In most parts of the world, there is reluctance on the part of men to use condoms, and sex with many partners is more acceptable for men than women. Women are therefore at risk even if they are monogamous. Women are unable to insist on the use of condoms, and may not know if their partners have other sexual partners. The female condom is under women's control but its use is obvious to male sexual partners. Women are also vulnerable to violence and non-consensual sex, during which there is no protection. Moreover, women who are infected may be afraid to take measures to protect their partners, as an admission of infection may result in rejection. In addition to all this, women's worth is often seen in terms of their ability to bear children. Currently the only protection from HIV, the condom with nonoxynol 9, also prevents conception.

Ideally, a protection method is required which is in the control of women, prevents HIV and STDs, does not prevent pregnancy, does not irritate the vaginal mucosa, is clear, odourless and undetectable in use, cheap, available without prescription, easily distributed and has a long shelf life in imperfect conditions. It should also be effective if used either before or after sexual intercourse. Research is currently being done to develop such a substance which could be used in the form of a cream, gel, film or sponge in the vagina.

Facts about microbicides

- *it could take 5-10 years to develop and test any new substances to be used vaginally, and to gain USFDA approval*
- *further research needs to be done on basic human reproductive biology*
- *there are a number of potential candidate microbicide compounds including detergents, chemicals such as iodophores, carbohydrates, antibodies, antiviral drugs, defensins and pyocins*[1]
- *several substances are already licensed for vaginal use (including nonoxynol 9) but it is not known whether these would be effective if used alone, and they may have an irritant effect on the vaginal lining (which could increase the chances of transmission).*
- *Trials will not be easy to design and will almost certainly have to take place in developing countries where there is less chance of non-sexual transmission of HIV through injecting drug use*[2]

The development of an effective microbicide would add a valuable dimension to the strategies available to stop the spread of HIV. But it is unlikely that they could be developed for some time, and even if they are developed, they will still be subject to some of the problems of distribution, affordability, correct use and perhaps acceptability which restrict condom use. It is still essential to work towards greater equality in the relationships of men and women if women's greater vulnerability to HIV and other STDs is to be reduced.

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Breastfeeding and the risk of mother to child transmission of HIV

(Briefing from the UK NGO AIDS Consortium)

Breastmilk is the prime source of nutrition for most infants throughout the world. It provides critical health benefits for both mother and child, including protection for infants from diarrhoeal diseases and other infections, and protection of the mother's health through lengthening birth spacing. Children's intellectual development may be improved. The relationship between mother and child is enhanced. Breastfeeding is cheap, safe and possible for almost all mothers. Sadly, it has been shown that HIV can be transmitted through breastmilk, and this has complex implications for policy towards infant feeding.

Facts on HIV transmission through breastfeeding[1]

- *HIV is present in breastmilk and (in a higher concentration) in colostrum*
- *if a woman is infected after giving birth, she can transmit HIV to her child through breastfeeding*
- *if a woman is HIV positive during pregnancy, the risk that her child will be infected is increased by breastfeeding - but we do not know precisely how much this risk is increased, and it probably varies in different circumstances. The best estimate is that the additional risk is around 7 to 14% for mothers with established HIV infection. Mothers infected around the time of birth and delivery are more infectious.*
- *in parts of the world where infant mortality, HIV rates and risks from artificial feeding are high any change to artificial feeding - even if this was only by HIV positive mothers - would increase child mortality rates*
- *breastmilk also contains a substance which may provide some protection against HIV infection by preventing the virus from binding with uninfected cells*
- *there is some evidence.*[2] *that the risk of transmission from breastfeeding may outweigh its protective effect if breastfeeding continues beyond a certain period. But we do not know enough about when transmission occurs to form any recommendations about this.*
- *Zidovudine (AZT) significantly reduces the risk of transmission if given to HIV positive mothers in the last six months of pregnancy and to babies for 6 weeks after birth*[3]*. But this is too expensive for developing countries and requires the testing of all pregnant women, which has ethical, financial and practical implications especially in developing countries*
- *pasteurised expressed breast milk is safe.*

As the numbers of HIV infections in women of childbearing age increase throughout the world, the significance of perinatal and breastfeeding transmission is also increasing. The current WHO recommendation is that where infectious diseases are not the main cause of infant deaths, women who are HIV positive should be advised to use an alternative to breastfeeding, but where the main causes of infant death are infection and malnutrition, all women should be advised to breastfeed. Current policy does not adequately address the needs of mothers in intermediary areas where child mortality from infectious diseases are of some importance and artificial feeding is feasible but hazardous. This needs to be addressed urgently. More research also needs to be done into how and when transmission through breastfeeding occurs in order to prevent transmission of HIV without increasing infant mortality.

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[1] see Nicoll et al, *Infant feeding policy and practice in the presence of HIV infection*, AIDS, 1995 Vol. 5 no 2

[2] Nagelkerke et al, *The Duration of breastfeeding by HIV-1 infected mothers in developing countries: balancing the benefits and risks*, Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, Vol. 8 No 2 1995

[3] Connor et al *Reduction of maternal-fetal transmission of HIV-1 with Zidovudine treatment*. New England Journal of Medicine, 1994, Vol. 331 No 18

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Condom use and effectiveness in the prevention of HIV transmission

(Briefing from the UK NGO AIDS Consortium)

The only totally reliable way to avoid sexual transmission of HIV is either not to have sex or to have sex with one uninfected lifelong monogamous partner. This is an ideal which should be acknowledged and promoted.

However, most of the world's population do not achieve this, and in order to prevent the potentially high numbers of deaths from AIDS, promotion and provision of effective protection is essential.

Good quality condoms provide this effective protection against both HIV and other sexually transmitted diseases if education and access to supplies is assured and if they are used correctly and consistently.

The facts about condom effectiveness:[1]

- *HIV is too large to pass through good quality latex condoms*
- *Condom slippage and breakage is often cited as a reason for not advocating condoms as a preventive measure. Rates are well documented and a number of studies show breakage rates varying from less than 1% to 7.3% and slippage rates varying from 1.6 to 5%. Important points are: not all incidents of breakage/slippage will lead to infection; an undetermined number of incidents can be attributed to misuse, and can be reduced through education: not all breakages are equally risky, as the risk depends on where and when the condom breaks.*
- *It has been shown that good quality well packaged condoms can remain in good condition after storage of up to five years in difficult conditions*
- *A study of 245 heterosexual couples with one partner who was HIV positive showed that none of the 123 partners who used condoms consistently became infected over a median period of 22 months. Of the 122 couples who did not use condoms or did not use them consistently, 12 of the uninfected partners became infected.*
- *If condoms are to be effective, this requires 100% use. While this is difficult to achieve, it is not an argument for rejecting condoms as a protective measure - the only alternative is abstinence and monogamy which is unlikely to be achieved 100% of the time by 100% of the population*

There is no doubt that condoms can significantly reduce the chances of becoming infected with HIV and other STDs. A strategy to provide condoms and promote education on their correct use is not incompatible with the promotion of abstinence and fidelity. Both should be part of any strategy to slow the spread of HIV.

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[1] facts from 'A response to recent questions about latex condom effectiveness in preventing sexual transmission of the AIDS Virus': prepared by PATH, Seattle, Washington USA

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AIDS AND INTERNATIONAL HEALTH DEPARTMENT

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AFRICAN NETWORK ON ETHICS, LAW AND HIV
DAKAR DECLARATION
1 JULY 1994

RECOGNIZING the impact that the HIV epidemic is having on all aspects of human life;

RECOGNIZING the need for an urgent response;

RECOGNIZING that the fundamental value of respect for human rights, life and human dignity provides the foundation on which all is built,

WE, the participants at the Intercountry Consultation of the African Network on Ethics, Law and HIV, affirm that any action, whether personal, institutional, professional or governmental, in response to the HIV epidemic, should be guided by the following principles:

1. THE PRINCIPLE OF RESPONSIBILITY

Every person, government, community, institution, private enterprise and medium must be aware of his or her responsibility and must exercise it in an active and sustainable manner.

2. THE PRINCIPLE OF ENGAGEMENT

Every person is affected, directly or indirectly, and therefore should respond with commitment, concern, courage and hope for the future.

3. THE PRINCIPLE OF PARTNERSHIP AND CONSENSUS-BUILDING

All persons, couples, families, communities and nations must work together with compassion to build and share a common vision. These partnerships must reflect and actively promote solidarity, inclusion, integration, dialogue, participation and harmony.

4. THE PRINCIPLE OF EMPOWERMENT

The empowerment of every person, but particularly women, the poor, the uneducated and children, is essential and must guide all action. Empowerment requires recognition of the right to knowledge, information and technology, freedom of choice and economic opportunity.

5. THE PRINCIPLE OF NON-DISCRIMINATION

Every person directly affected by the epidemic should remain an integral part of his or her community, with the right of equal access to work, housing, education and social services, with the right to marry, with freedom of movement, belief and association, with the right to counselling, care and treatment, justice and equality.

6. THE PRINCIPLE OF CONFIDENTIALITY AND PRIVACY

Every person directly affected by the epidemic has a right to confidentiality and privacy. It can only be breached in exceptional circumstances.

7. THE PRINCIPLE OF ADAPTATION

Every person and community should change and adapt social and cultural conditions to the new challenges of the epidemic in order to respond effectively.

8. THE PRINCIPLE OF SENSITIVITY IN LANGUAGE

Language should uphold human dignity, reflect inclusion, be gender sensitive, accurate and understandable.

9. THE PRINCIPLE OF ETHICS IN RESEARCH

The interests of the research subjects or communities should be paramount. Research should be based on free and informed consent, be non-obtrusive and non-coercive, and the results should be made available to the community for timely and appropriate action.

10. THE PRINCIPLE OF PROHIBITION OF MANDATORY HIV TESTING

HIV testing without consent should be prohibited. HIV testing should also not be a pre-requisite for access to work, travel or other services.

This Declaration was drafted and endorsed by participants at the Intercountry Consultation of the African Network on Ethics, Law and HIV, organized in Dakar, Senegal, from 27 June to 1st July 1994, by the UNDP HIV and Development Programme (Dakar and New York). Participants came from Central African Republic, Côte d'Ivoire, Ghana, Kenya, Rwanda, Senegal, South Africa, Uganda, Zambia, the WHO Global Programme on AIDS, the WHO Regional Office for Africa, the UNDP Management Development and Governance Division, the UNDP HIV and Development Project in Asia and the Pacific, the Asian and Latin American Networks on Law, Ethics and HIV, the African Council of AIDS Service Organizations (AFRICASO), the Association of African Jurists (AJA), ENDA Tiers Monde, the Network of African People Living with HIV/AIDS (NAP+), the Organisation Pan-Africaine de Lutte contre le SIDA (OPALS) and ORSTOM.

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The international newsletter on AIDS prevention and care

AIDS action

ue 30
ptember–
vember 1995

HIV, drugs and diets

Eating well is important for maintaining good health and is an essential part of care for people with HIV.

UNICEF/Sierra Leone/Carolyn Watson

Articles in this issue of *AIDS Action* highlight two areas of interest for people living with HIV or AIDS and those involved in caring for them – nutrition and anti-HIV treatments.

The article on pages 2 and 3 summarises new developments in treatments for tackling HIV. The author emphasises that, although researchers are making some progress, fully effective and affordable drugs against HIV have not been developed yet. Prevention and treatment for common opportunistic illnesses are still the most important strategies against HIV, especially now that TB causes more deaths in HIV-positive people than any other infection.

Good nutrition also plays a major role in maintaining health (see pages 4 and 5). It is often possible to make low-cost meals that are more nutritious, tastier and easier to eat for people who are unwell.

On page 8, a reader in Tanzania explains how she successfully introduced the group exercise 'Understanding HIV' which was described in issue 27. This issue features another educational game which is popular in Chile, and which could be adapted for use in other languages and situations.

Contribute to *AIDS Action*

Future topics include TB and HIV; practical strategies for promoting people's rights; blood safety and infection control; ideas for integrating HIV into community development and education; planning, monitoring and evaluation techniques; traditional medicine; working with young people and children; and counselling.

Please send articles describing successful activities and approaches to AHRTAG in the UK.

THIS ISSUE

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Slow progress against HIV

We are still a long way from discovering a 'cure' for HIV infection. ***AIDS Action*** *highlights problems in developing new treatments.*

There are three types of treatment for people with HIV. These aim to:

- prevent the virus from reproducing
- strengthen or 'boost' the immune system
- cure opportunistic infections.

Anti-HIV treatments

One type of anti-viral drug aims to prevent or slow down viral reproduction in human cells (see box below). The drugs have a similar chemical structure to human DNA. This means that the virus bonds with the drug rather than the DNA, and so cannot use the DNA to reproduce itself.

How HIV works

After someone has been infected by HIV the virus begins to multiply rapidly in the body. The virus attaches itself to the surface of special white blood cells involved in fighting infections (CD4 cells). Then, after entering a CD4 cell, the virus bonds with the cell's DNA. DNA is the human genetic material which enables cells to reproduce. This means that when the cell tries to reproduce itself, it is forced to produce more virus instead of another human cell, and is also destroyed in the process.

At first, the person's immune system is able to kill many of the CD4 cells which become infected with HIV. However, the virus is never totally destroyed. It continues to reproduce and eventually the immune system becomes unable to destroy the large numbers of HIV-infected cells. As the number of uninfected CD4 cells declines, the immune system becomes less able to fight illnesses.

The most widely used anti-viral drug is still AZT, or zidovudine. AZT has been in use since 1985 and is manufactured by Wellcome, under the brand name of Retrovir. Its benefits are limited when taken alone. The 1993 Concorde trial showed that AZT does not benefit people who are still healthy.

A number of other anti-viral drugs have been licensed in different countries for use alone (monotherapy) or in combination with AZT (combination therapy). They include ddI (didanosine), ddC (zalcitabine) and d4T (stavudine).

In September 1995 an international drug trial called Delta proved that a combination of anti-viral drugs is much better at delaying the development of HIV-related infections and death than AZT alone. The two-year trial compared the health status of people with HIV taking 'combination therapy' (AZT plus ddI or AZT plus ddC) with another group taking AZT alone. Ten per cent of participants were women.

Results show that, compared with taking AZT alone, the likelihood of dying for people taking combination therapy was reduced by almost 40 per cent. The benefits were greatest for participants who had never taken an anti-viral treatment before. However, disease progression was not affected for those starting combination therapy after taking AZT alone for several months.

Pregnancy and AZT

Two recent studies show that AZT treatment for HIV-positive pregnant women before and during delivery, and for their newborns, can reduce HIV transmission to the baby. A study in the USA called ACTG 076 showed that the chance of mother-to-baby HIV transmission was reduced by two-thirds when AZT was given during the last 20 weeks of pregnancy, intravenously during childbirth and to the newborn child.

However, there are many unanswered questions. The studies, in Europe and North America, involved only a small number of infants. The results may not apply to all HIV-positive women. AZT is toxic, and its long term effects on women and newborn infants are not known. Only one-third of infants born to women with HIV are HIV-infected themselves, therefore many uninfected babies could be exposed needlessly to AZT.

Although some pregnant women with HIV in Europe and North America are taking it, more follow-up is necessary. Following the Delta trial it seems likely that women who choose to take anti-viral treatment during pregnancy will be recommended combination therapy rather than AZT on its own.

Problems

There are several disadvantages to anti-viral drugs. It is now clear, for example, that the virus quickly becomes resistant to AZT. All these drugs are toxic and cause side effects such as nausea, anaemia and muscle wasting, and sometimes other serious illnesses. These side effects are more severe at higher doses and more likely to appear in people with advanced HIV infection. For people without symptoms there are fewer side effects but the long-term impact on their health has not been studied.

People taking anti-viral drugs need access to regular and expensive monitoring tests which require laboratory facilities and trained staff. For example, blood tests are needed to detect anaemia, as well as high enzyme levels in the blood which can lead to serious illnesses such as pancreatitis. Taking the drugs without medical supervision can do more harm than good.

Other types of anti-viral drugs are still in very early stages of development. Studies are taking place to investigate drugs called 'protease inhibitors' such as saquinavir. Protease inhibitors aim to deactivate the special HIV enzyme

which enables attachment to the white blood cells. Scientists hope that they will be less toxic than drugs such as AZT and ddI. Trials are in preliminary phases and there is no evidence at present to suggest that they prolong life or delay the development of HIV-related illnesses.

Immune system boosting

Another area of research focuses on strengthening or 'boosting' the immune systems of people with HIV. It is hoped that strengthening certain components of the immune system could protect HIV-positive individuals from developing illnesses. For example, treatments to increase the number of white blood cells could help the body to fight HIV for longer.

There is debate among scientists about the value of these treatments. Increasing the number of white blood cells could also increase the number of these cells that are infected with HIV. The only large trial, carried out with 'imuthiol' or DTC, found no clear evidence of benefit and even a possibility that it hastened development of HIV-related illnesses. Another drug called 'interleuken 2', already used for kidney cancer, is about to be tested for its effect on the number of CD4 cells. Experimental trials with drugs used for other illnesses are also under way.

The immune system may also be suppressed when someone is poorly nourished or under stress. Many people living with AIDS can feel healthier and stronger if they are able to change their lifestyle and diet and reduce stress. Alternative approaches to strengthening the immune system involve using Chinese medicine and acupuncture, herbal medicines and forms of relaxation. Some herbal medicines are being studied although no scientific research has yet been completed. Traditional and herbal remedies will be looked at in future issues of *AIDS Action*.

Affordable and effective?

The results of recent studies are encouraging. However, therapies are extremely costly and many have side effects. Even people in North America and Europe, who have access to these treatments, are deciding not to take them. Unless effective and low cost therapies can be developed, the prevention and treatment of opportunistic infections such as TB and diarrhoea continue to be the best strategies for most people with HIV. Appropriate care and 'positive living' can reduce stress and improve quality of life.

T Farkas/WHO

Laboratory testing is only one part of the long process of developing new drugs.

Keith Alcorn, National AIDS Manual, 52 Eurolink Centre, 49 Effra Road, London SW2 1BZ, UK.

See p8 for NAM publications.

Developing new drugs

New treatments need to be tested for safety and effectiveness in several stages, before they can be licensed for commercial manufacture. The research process can take many years and involves:

- laboratory studies to assess the impact of the drug on the virus itself
- research on animals to study effects on health and the immune system
- small scale studies/trials with volunteers to test for side effects and impact on health and immune system
- large scale studies with many people for at least a year to prove safety and effectiveness.

Reports in the media about the discovery of a cure often raise false hopes because all the trial stages have not been completed. There is much debate about whether drugs should be made available before the final stage is completed, because the need for treatments is so great. Some drug companies have run lotteries to select trial participants, because so many people volunteer to take part.

Eat healthily, stay healthy

Good nutrition is essential for health. ***AIDS Action*** *looks at nutritional needs for people with HIV.*

It is extremely important for a person living with HIV to eat a nutritious diet. A well nourished person is less vulnerable to illness whether or not they have HIV infection. Both HIV and poor nutrition can damage the immune system.

It is important to have reserves of energy to combat infections such as TB which use up the body's energy, or diarrhoea and vomiting which result in loss of nutrients. Both emotional stress and opportunistic infections can reduce a person's appetite. Infections in the mouth and throat, such as thrush or open sores, can make eating difficult and painful.

Some studies have shown that HIV itself can cause severe weight loss. This can take the form of muscle wasting where muscle and other protein stores are used up, in addition to fat reserves. Healthy people with HIV infection are recommended to eat as much as possible of a balanced diet. Some people like to take special vitamin and 'energy-rich' supplements. However, these are costly and are not necessary.

It is especially important for people with HIV to have enough proteins and micronutrients such as vitamin A and iron. Vitamin A plays a key role in keeping the immune system healthy. Studies show that children who lack vitamin A have more frequent diarrhoea and respiratory infections.

Nutritious and easy to eat

Some foods can be made more nutritious and easy to digest. Porridge can be made more energy-rich by adding nuts or oil, by replacing some of the water with fresh milk or coconut milk, or by adding mashed fish, dark green or orange fruits and vegetables or fruit juice.

Traditional weaning foods can be adapted for people who are sick or having difficulty in eating. Porridge can be made thinner, easier to swallow and more nutritious by 'fermenting' or 'malting'.

Fermentation turns some of the starch in the flour into acidic products. This sours the porridge, making it thinner with a higher concentration of nutrients, and also increases the absorption of some nutrients such as iron and zinc. Bacteria which cause diarrhoea are less likely to grow in soured than in ordinary porridge. One way to make soured porridge is to mix flour with water so the mixture is liquid, leave it to ferment overnight, and then cook as normal. The flour and water mixture becomes more sour the longer it is left. Cooked porridge can also be soured by adding a spoonful of previously fermented porridge.

Malting means allowing cereal grains to germinate (start sprouting) by soaking them in water for two days, spreading them out on sacks and covering them with a damp cloth. They are then left in the dark and kept damp for two to four days. After malting, the grains should be washed and dried before they are roasted, fermented, or pounded into flour. It is important not to use grains which have developed mould because this can become toxic.

Helping with difficulties

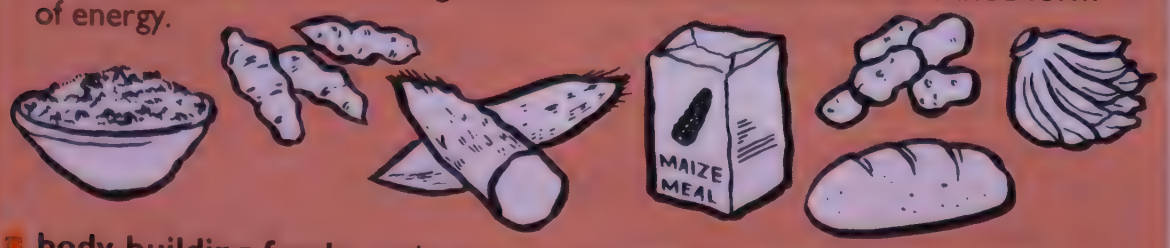
What is good for a healthy person is good for a sick person. However, people who are sick with HIV-related infections may need a diet that helps them to:

- increase their appetite and take in enough nutrients
- help the digestive system cope with and recover from diarrhoea
- recover weight and strength lost during illness.

What is a balanced diet?

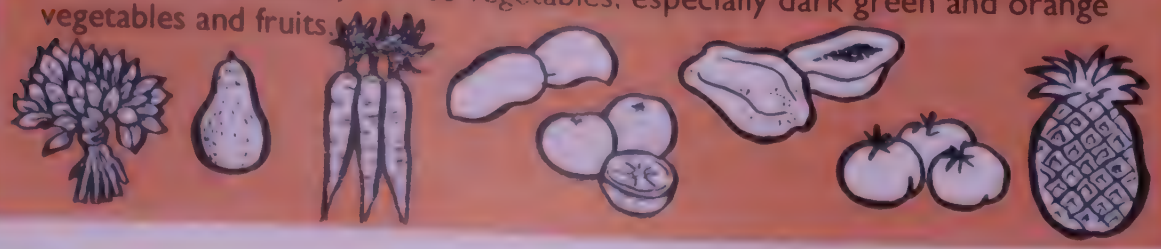
Nutrients are the part of food that the body uses to produce energy for growth and movement, to build and repair tissue and to protect itself from infections. It is possible to obtain all the nutrients that the body needs in everyday, inexpensive food. Every meal should ideally contain food from each of these groups:

- **energy-giving foods,** such as rice, maize or millet porridge, bread, cassava, plantain or yam. These provide the main part of the meal and most of the energy. Sugar, animal fats, vegetable oils and nuts are a concentrated form of energy.



- **body-building foods,** such as meat, chicken, fish, eggs, dairy produce, beans or nuts. These contain protein and micronutrients such as iron, zinc and calcium and some vitamins.

- **vitamin-rich foods,** such as vegetables, especially dark green and orange vegetables and fruits.



Ingrid Emsden

During illness

It is important for the person to continue to eat as much as possible. The food should be easy to eat and easily absorbed.

Mouth sores: the person may prefer to eat food that does not need to be chewed, for example milk, porridge, soup, or mashed fruit or vegetables. It is important not to make the food too watery because this reduces the amount of nutrients. Cool food can be more soothing than hot food. Avoid using spicy and peppery foods.

Poor appetite: it is best for the person to eat small amounts more often than usual. Use a variety of foods that the person likes. If they feel nauseous avoid strong smelling foods and cooking smells that linger.

Diarrhoea: this damages the gut so fewer nutrients are absorbed. Damaged intestines need easily digestible foods such as porridge or soups. In some cases fatty or oily foods can worsen diarrhoea because the gut cannot absorb them. Milk can also cause poor absorption in a few people. Damaged intestines are sometimes intolerant to lactose, the sugar found in milk. If the diarrhoea persists the person can consider excluding milk from their diet to see whether the diarrhoea lessens. Other nutritious foods should be taken instead. Antibiotics can also worsen diarrhoea.

During illness, especially diarrhoea and vomiting, make sure the person drinks extra fluids to prevent dehydration, such as thin porridge, coconut water, fruit juices, thin vegetable soups or yoghurt-based drinks. Oral rehydration salts solution can be taken if available.

Quick recovery

When an acute infection passes it is important for the sick person to have extra food in order to repair the gut, rebuild muscles and replace the body's store of nutrients that has been used up during the illness. This extra food is needed until the body has regained weight. The person should try to eat one extra meal each day, and it is good to have extra food at each meal.

Staying well

When the person is feeling stronger, they should try to continue eating well, including foods that have not been eaten during illness.

For women and children

All pregnant women need extra nutrients, especially if they are anaemic (iron deficiency). It is important for all pregnant women to have enough vitamin A through eating dark green leaves or orange fruits and vegetables, and, if available, liver or egg yolk. A study in Malawi has indicated that babies born to HIV-positive women with vitamin A deficiency are three or four times more likely to have HIV than those born to HIV-positive women with normal levels of vitamin A. It is thought that this is because vitamin A is important for the immune protection provided by the mother and prevents HIV from passing across the placenta from mother to child. This finding is being investigated further.

Breastmilk is the best form of nutrition for every infant, especially during diarrhoea. If the mother has decided not to breastfeed, for example due to severe HIV-related illnesses, ensure that the child is fed adequately using a cup and spoon (see *AIDS Action* 27). After an attack of illness give older children an extra meal until they are at least the same weight as before the illness.

Community coping

It is often difficult for people living with HIV and their carers to eat well. Illness in a family is often linked with poverty, because, for example, adults may be too sick to cultivate land or to earn income.

Food aid Some NGOs provide food aid to families. However, many people in poor communities are badly nourished or sick, not just those with HIV. Providing food only to people known to have HIV draws attention to them when they may prefer to keep their HIV status confidential. Some NGOs have chosen to provide food through schools and mother and child health or TB clinics. One NGO in Tanzania provides food to families where the household has an orphan or is headed by a child, elderly person or woman with no land. Decisions about who receives food are made by local committees.

Maintaining food production It is important to work with local people and agricultural programmes to avoid food shortages caused by a decline in farming. Providing technical support, such as training on crop diversification and livestock management, transport, storage and marketing, or providing credit can lessen food shortages and increase income. Some organisations work with legal associations to ensure land inheritance for widows and children who would otherwise lose their land on the death of a partner or parent.

Home care Home care and counselling advice should include information about nutrition. Some organisations are running courses for people with HIV and their carers about improving nutrition with locally available products.

Sources: Semba R, 1994, 'Maternal vitamin A deficiency and mother-to-child transmission of HIV-1', The Lancet, vol. 343, no 8913, p1593-1597.

'Malnutrition and chronic diarrhoea - nutrition guidelines' (draft), 1995, City Health Department, Mutare, Zimbabwe.

Safe food preparation

People with HIV are vulnerable to infection. Clean food preparation and storage can reduce the spread of germs, including those that cause diarrhoea.

- Cook food until it is thoroughly heated, and heat liquids until they start to bubble, to kill any germs.
- Avoid storing cooked food for more than 24 hours. Thoroughly reheat food that has been kept more than two hours after being cooked. Store water and food in clean, covered containers.
- Wash fruits and vegetables with clean water.
- Use safe, clean water for drinking and preparing food.
- Wash hands with water and soap or ashes before and after food preparation or eating food.
- Use a clean cup to feed infants. Feeding bottles and teats are difficult to keep clean.

AIDS: everyone's task

Organisations working in community health development have a key role in AIDS education. EPES, a community health group working in Chile, describe how they developed the game on page 7.

When we started talking about AIDS we realised that we did not have any teaching materials to share knowledge with people in a participative way. So in 1989 we developed a board game called Learning about AIDS: everyone's task. The game is based on local people's experiences and aims to:

- provide basic information on HIV/AIDS
- encourage discussion about ideas, beliefs and myths about AIDS
- give opportunities for open exchange of opinions and views about sexuality and AIDS
- promote awareness of how AIDS affects the community and the need for HIV prevention.

Everyone is affected by AIDS and has a role to play in fighting the epidemic. Every community is able to respond in a supportive, caring and effective way. But people need opportunities to discuss the issues and think about their attitudes and feelings.

The game uses two sets of cards: 72 'Everyone's task' cards with questions on HIV transmission and prevention; and 35 'Community' cards describing possible situations in the community where problems and issues about HIV and AIDS could arise (see examples). The issues are discussed in a booklet which accompanies the game. It is essential to have a skilled facilitator who is aware of the issues that arise when talking about HIV and sexual health.

People play the game in pairs using a dice. Each player in turn moves their counter forward the number of squares on the board shown on the dice. If the counter lands on a square marked with a number the person picks up a card and answers it. When a counter lands on a 'Community' card square the group discuss the issue. These cards do not have 'right' or 'wrong' answers.

The game was designed with a group of people involved in education or living with AIDS and is based on real life experiences. Each group who uses the game can change it for local use. For example, a group of students at the local university played the game during a special event. They made a large-scale version on a football pitch, built life-size models of the community buildings and made a giant dice. Groups in other countries could develop a new set of issues and questions for the players to consider.

The game can be a useful part of an HIV prevention strategy which includes three key elements: relevant information and education; access to services; changing social attitudes to enable every individual to develop their own sexuality healthily and safely. The game both provides information and challenges the players to think about all the issues in their community.

Sonia Covarrubias, EPES, Casilla 360-11, Nuñoa, Santiago, Chile.

Sample 'Everyone's task' cards:

- What is AIDS?
- What is an 'immune system'?
- Are HIV symptoms the same in men and women?
- Name three ways in which someone can become infected with HIV.
- Name various ways of reducing the risk of HIV transmission.
- Does everyone with AIDS die because of this illness?
- Should someone with HIV continue in his or her job?
- True or false: married people do not get HIV.
- Can using drugs or alcohol contribute to risk of HIV transmission?
- Do birth control methods prevent HIV transmission?

Sample 'Community' cards:

Clinic: Free condoms are available at the clinic for HIV prevention. Should condoms be given out free? What do you think?

Pharmacy: The pharmacy on the corner sells condoms. In a role-play show how you would ask for a condom, with your partner playing the part of the pharmacist.

Home: Your husband is going away for a football match at the weekend. You are worried about AIDS and afraid that your husband will have an affair while he is away. How do you talk with him about this?

School: A teacher says 'If we teach children in school about sexuality and AIDS we will encourage them to be more sexually active.' What is your opinion?

Neighbourhood centre: In a community meeting a neighbour asks why there is no compulsory HIV testing. She is afraid and thinks that we should know who has HIV to be able to help them. What do you think about mass compulsory HIV testing?

Bar: A friend is applying for a job as a cashier at a bar in town. They insist that he has an 'AIDS test' before getting the job. Should people have HIV tests before getting jobs?

Church: A group of young people in a local congregation ask for teaching about how to prevent HIV and insist that the issues be discussed directly and frankly. How can the Church respond to a direct request such as this?

LEARNING ABOUT AIDS

EVERYONE'S TASK

Published by AHRTAG in the UK

LETTER

'Understanding HIV': shall we try it?

After studying the training exercise 'Understanding HIV' explained in issue 27 of *AIDS Action* we decided to introduce it into our AIDS education workshops. Each time we carry out the exercise it has a deep impact on the group. Once the group has really understood how to proceed in the game each step brings up important issues and feelings which are very helpful in strengthening AIDS awareness.

Because our teaching team is involved in providing HIV/AIDS services both at a counselling centre and in the community we find the reactions during the game parallel those encountered in the reality of every day. It is a good learning exercise and helps us move from theory to experience if used during an education workshop. We are ready for more innovative techniques to keep AIDS education alive!

Dr Brigid Corrigan, Pastoral Activities and Services for AIDS, Dar es Salaam, Tanzania.

Ed note: We like to hear from readers about their views on the articles and activities in *AIDS Action*. Please write and tell us what you would like to read about and how you use *AIDS Action* in your work.

RESOURCES

Nutrition for developing countries is a practical guide for nutrition workers working in the community and gives basic facts on nutrients and food. *Available for £3.95 from TALC, PO Box 49, St. Albans, AL1 4AX, Herts, UK.*

What has AIDS to do with agriculture? is a booklet for agriculture workers and planners in HIV affected areas. *For price and availability write to Publications Division, FAO, Viale delle Terme di Caracella, 00100, Rome, Italy.*

Caring for people with AIDS at home provides information for teaching families to provide nursing care to people with HIV including nutrition, hygiene, pain relief and treatment of main opportunistic infections and information on HIV transmission and prevention. *Available for Swiss francs 5.00 in English, French, Portuguese and Spanish (Arabic in preparation) available from International Federation of Red Cross and Red Crescent Societies, PO Box 372, CH 1211 Geneva 19, Switzerland.*

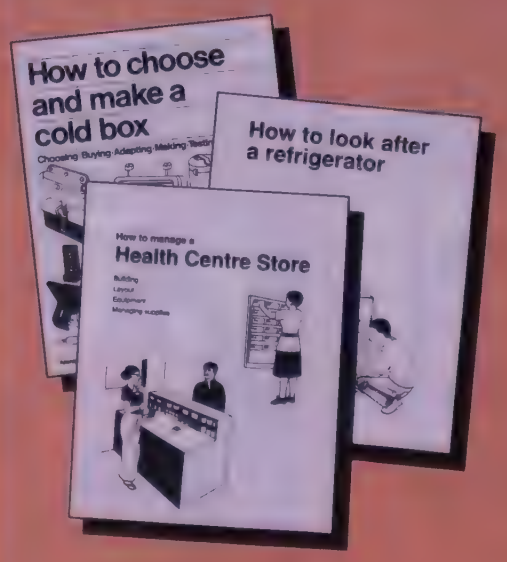
Newsletters

AIDS Treatment Update is a monthly newsletter providing information about new clinical trials and treatments that are available mostly in Europe and North America, but can be useful for health workers and researchers in developing countries. *Available for £40 per year from NAM, Unit 52, The Eurolink Centre, 49 Effra Road, London SW2 1BZ, UK.* NAM also produce a twice-yearly A-Z of treatments and opportunistic infections, the HIV & AIDS Treatments Directory.

AIDS Treatment News is published 24 times a year. It provides information on experimental and standard treatments for HIV disease, mostly aimed at North America and Europe. *Available for US$120 per year or US$60 for six months from AIDS Treatment News, P O Box 411256, San Francisco, CA 94141, USA .*

There are many groups set up by people living with HIV and AIDS providing support on treatment issues and care, including nutrition. *For more information about local groups contact Global Network of People Living with HIV and AIDS (GNP+), PO Box 11726, 1001 GS Amsterdam, The Netherlands or International Community of Women living with HIV & AIDS, PO Box 2338, London W8 4ZG, UK.*

Practical and low-cost manuals for health workers from AHRTAG



How to choose and make a cold box £5.00
How to look after a refrigerator £2.50
How to manage a health centre store £5.00
For details please write to AHRTAG and ask for a Publications List.

The international newsletter on AIDS prevention and care

AIDS action

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AHRTAG is committed to strengthening primary health care and community-based rehabilitation in the South by maximising the use and impact of information, providing training and resources, and actively supporting the capacity building of partner organisations.

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14

MATERIAL ON HIV/AIDS

SENT BY

MEDICAL MISSION INSTITUTE

AIDS AND INTERNATIONAL HEALTH DEPARTMENT

SALVATORSTR. 22

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GERMANY

000 p.m. at Sheraton Hotel, Crane Function Room. OPALS Forum on : "Care, Research and Ethics". Introduction by Pr M.Gentilini and Dr S.I.Okware. A paper on the Dakar Workshop presented by Mrs E. Reid (UNDP). Facilitator D.Rwegera (anthropologist, Opals Rwanda). Discussants: "Care & Ethics" , Dr N'Mugyenyi (JCRS, Uganda), Dr P.M'Pele (Opals, Congo) Major R.Ruranga (Uganda). "Research & Ethics- How to ensure that research is relevant to african needs", Mrs A.Desclaux (anthropologist, France), Pr A.Kadio (Opals, Ivory Coast), Mrs A.Bamdara (Lumière et Action, Ivory Coast) . Synthesis by Dr Rwegera and Dr F.Chièze (Opals).

INFORMATION TIPS

The IX th ICASA taking place at Nile Hotel International is the biggest conference ever organised in Kampala. Miss Anne Namuyomba Conference Services Supervisor is reachable Rm 249; Tel 235900/9 Ext 745/677.

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There may be local customs or traditions that increase the risk of people getting HIV.

Organizations working with communities to reduce poverty or to improve the status of women have a great deal of experience in dealing with these problems and i t may be useful to link up with them and to draw on their expertise in order to enhance prevention efforts.

When thinking about what information to share with the community, we must not forget that people with HIV and AIDS are also getting these messages.

We have learnt from experience that messages that make people fearful and anxious can also make them angry.

Helping communities to acknowledge that AIDS is a problem that concerns thems immediatly and directly and to recognize the

The program is co-sponsored by six United Nations agencies:United Nations Children's Emergency Fund (UNICEF), United Nations Program for Development (UNPD), United Nations Fund for Populations (UNFP), United Nations Organization for Education, Science and Culture (UNESCO), World Bank, World Health Organization (WHO)

July 1995: Official structure of the program adopted
January 1996: Official launching

Budget:
$120 million (more than $20 million donated by the 6 agencies).
Approved for 2 years (1996 and 1997) by the Program Coordination Council (22 countries and non-governmental organizations).

Budget distribution:
Support to countries:$61.4 million (51.2%)
International policy and research:$34.6 million (28.8%)
External relations, management and administration of the program:
$13.7 million (20%)

Expenditures engaged by the 6 agencies for program implementation:
(1994-1995 figures in US $)
UNICEF 45 million, UNPD 72 million, UNFP 31 million, UNESCO not communicated, WHO 138 million, World Bank 80 million
Total $366 million

Hiroshi Nakajima, WHO Africa Regional Director, Dr Michel Sidibe, Dr Samba, and the Executive Director of the newly created UNAIDS, Dr Peter Piot, yesterday held a joint press conference in Kampala.

The trio are in Kampala to attend the IX International Conference on AIDS and STDs in Africa (ICASA) .

Dr Nakajima said although Africa is the worst hit by the HIV/AIDS epidemic, it has a unique experience to share with the rest of the world, namey direct involvement of heads of states in mobilising people against the epidemic.

Dr Piot said that the new HIV/AIDS programme co-sponsored by United Nations agencies: UNDP, UNESCO, UNICEF, WHO, UNFPA and the World Bank, will consolidate resources of the co-sponsors "to provide better response."

Dr Samba said developed countries should assist the poor Third World to combat the spread of HIV, adding that AIDS does not respect political boundaries.

Traditional drugs treat AIDS

By Ndyakira Amooti

Renown French Scientist in the field of HIV and AIDS, Prof Luc Montagnier, has said that traditional medicines found in the developing countries could play an important role in treating AIDS symptoms.

Prof Montagnier who led a team of French scientists that discovered that HIV was the cause of AIDS, tolf a press conference in Kampala on Saturday evening, December 9, that the use of plant extracts in the treatment of HIV/AIDS could lead to cheaper and affoerdable treatments.

He said, it was not necessary to purify plant extracts, saying , " in some of the plant extracts all the compounds are necessary in the treatment of AIDS." He, however, cautioned that even with traditional medicines, all the rules of drug evaluation should be followed.

He further said it could be possible to combine both traditional and modern drugs in HIV/AIDS treatment to acheive better results.

Prof Montagnier who is in Uganda to attend the IX International Conference on AIDS and STDs in Africa (ICASA), pointed out that although advances have been made in the development of drugs for the treatment of HIV:AIDS, the poor countries, which today constitute over 90 per cent of the people infected with HIV, cannot affort the drugs.

Talking about the new approach to combine various drugs in the treatment of HIV/AIDS, he said that it is better than using just one drug. He further said that it has now been established that treatment is better using smaller doses of any drug.

Prof Montagnier, who is the chairman of the joint World Foundation for AIDS Research and Prevention, said the Foundation is planning to establish research centres in Africa for better study of the AIDS pandemic and early treatment of the disease, as well as, evaluation of various dugs imported into the continent for HIV:AIDS treatment.

He said one such research centre has beeen established in Paris, France, using complex combination of treatments. He said, in Africa, first centres will be set up in East Africa and Abdijan in Ivory Coast.

He told reporters that while the HIV infection was generally slowing down in Western Europe and North America, in the developing countries of the South: South America, Africa, Indian sub-continent, Eastern Asia, the epidemic is increasing rapidly.

He attributed the rapid infection in the South to biological, social and economic factors in these regions. He said, for example, that there are different HIV sub-types from those in the North. Another reason, he said could be the activation of the immune systems, and also prevalent of many other infections in the developing societies which fuel the spread of hIV, namely the tradtional sexually transmitted diseases (STDs).

Among the social factors, said Montagnier, is rapid urbanisation in the South which is accompanied by rural-urban migrations of young and single men. He pointed that the new lifestyles in the towns expose young men to risky sexual behaviour.

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Problem-posing HIV/AIDS/STD education: learning = critical thinking

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In most countries, there is a significant gap between those who are "informed" about the danger of HIV/AIDS/STDs and those who have made behaviour changes to protect themselves. Usually, before any behaviour change can take place, individuals must critically analyse new information in the light of their own values and situation. Then they must decide whether and how they can integrate that information into their own lives.

Many AIDS education activities merely provide people with information. However, certain types of educational activities develop critical thinking skills required to analyse systematically situations and problems. The National AIDS Committee in Côte d'Ivoire (Ivory Coast) used this insight as well as lessons from adult education to conduct a five-day workshop for health personnel focusing on the development of critical thinking skills. Based on that experience, we describe how similar workshops can be organized to develop participatory learning experiences for community groups.

Background

The workshop in Côte d'Ivoire was held near the capital city for 22 teams of community health workers from rural health centres throughout the country. Each team consisted of an Ivorian nurse or midwife and an American Peace Corps volunteer.

On the first two days, an update was given on the AIDS/STD epidemic in the country, and basic concepts of adult education and participatory communication were discussed. The participants then formulated the following goal for their own community education strategies: "to analyse with the community the problems related to AIDS and to identify together strategies for preventing AIDS and other STDs." During the last three days, they developed problem-posing education materials, practised using them with the different community groups and then developed education action plans for their own communities.

Principles underlying the workshop

Critical thinking is a reflective process in which the individual decides what to do or what to believe. The following characteristics of learning materials and of the learning environment have been shown to be important for the development of critical thinking skills.

Educational materials must reflect individuals' or groups' socio-cultural values and reality. Such materials are beneficial insofar as they require learners to analyse new information relative to their own prior knowledge and values. The incorporation of community knowledge and values into the content of materials encourages learners to analyse new information in the light of their previous experiences and learning.

Educational materials must be problem posing and open-ended rather than provide set solutions. Problem-posing materials encourage analysis of alternative approaches rather than rote learning of pre-defined solutions. Educational activities need to involve "learners" in actively analysing real HIV/AIDS-related situations.

Facilitators must be skilled in using questioning strategies which encourage critical thinking rather than rote learning. Facilitators must stimulate learners to analyse critically situations and problems and to identify their own strategies for dealing with those situations. This requires the use of carefully formulated questions.

In the learning context, all participant opinions must be encouraged and respected. Participants can only feel confident to share their ideas openly and creatively if the learning environment fosters respect for all points of view.

Discussions among groups of peers are especially effective insofar as they encourage the exchange of views and considera-